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ABSTRACT

The second of three related reports, this volume includes the final reports for the second and third phases of a study designed to identify teaching processes that are efficient in helping secondary school students learn to read. The report of the second phase describes an experiment in which a group of teachers was trained to use specific organization and management techniques in classes where they were attempting to help students gain reading skills. The third phase report compares the results of a treatment group of teachers trained by second phase teachers with those trained by Stanford Research Institute staff and with a control group that received only the training materials. Following an introduction to the background of the study, the first nine chapters of the report describe the second phase design, sample, instruments, and data collection, as well as the individual workshops and their effects on teacher behavior and student achievement. The next three chapters discuss the background of the third phase of the study, and its design and findings. Appendixes include the instruments from the study, characteristics of the students tested for reading skills, observation variables, data from the first phase of the study, and observation variables of all three phases. (HTH)

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SRI International

HOW TO CHANGE THE PROCESS OF TEACHING BASIC READING SKILLS IN SECONDARY SCHOOLS

Phase II and Phase III

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Final Report

May 1979

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PREFACE

This volume of the Study of Teaching Basic Reading Skills in Secondary Schools includes the final reports for Phase II and Phase III. The Phase II report describes an experiment in which a treatment group of teachers from eight districts were trained to use specific organization and management techniques in classes where they were attempting to help secondary students gain reading skills. A control group of teachers from the same districts, working with similar students, did not receive training until the end of the experiment. The report provides a description of the inservice training workshops, the results of the training program, implementation, and student achievement. In addition, the Phase II report compares correlational findings of process and outcomes for Phase I and Phase II.

Phase III is essentially a dissemination study to see whether teachers who were trained by SRI staff in Phase II can then train other teachers to use the suggested processes. The Phase III report compares the results of a treatment group of teachers who were trained by Phase II teacher leaders with a control group of teachers who were trained by an SRI staff person, and another control group of teachers who did not receive training but received only the training workshop materials.

A final summary makes recommendations for continuing inservice training and provides a broad dissemination plan.

ACKNOWLEDGMENTS

This final report of the Study of Teaching Basic Reading Skills in Secondary Schools reflects the dedication, commitment, and effort of many people, both within and outside SRI International.

This evaluation was conducted within the Health and Social Systems Group which is headed by Marcellus L. Henderson, with Richard A. Marciano as Director of the Education Research Center, and Jane Stallings as Manager of the Classroom Process Studies Group.

The study was funded by the Teaching and Instruction Division of the National Institute of Education. We appreciate the support and encouragement given by Virginia Koehler, Assistant Director of that Division, and Kent Viehoever, Project Manager of our grant.

We are grateful to our consultants, Richard Snow of Stanford University and Andrew Porter of Michigan State University, for helping to design the study. Their valuable suggestions at the inception of the study made it possible to proceed when the complexity of gathering data in high schools seemed formidable. Our consultants who reviewed the report were Carolyn Evertson of the University of Texas at Austin, and Barak Rosenshine of the University of Illinois. We appreciate their incisive comments and valuable suggestions for revisions in the document.

Special recognition is due to the SRI staff who assisted in the site coordination, scheduling, and data collection. They are Marion Arnot, Rebecca Cieniewicz, Anne Robertson, and Elree Wright.

Finally, we express our thanks to the school district administrators, teachers, and students who participated, some of them for all three phases of the study. These participants not only allowed us to study their classrooms, they also collaborated with us to translate our

research findings into practical suggestions for teachers. They joined us in our enthusiasm for the study and are continuing to promote the ideas that evolved.

MAJOR FINDINGS

- Teachers who were trained in the workshops did change their classroom management styles in ways recommended.
- The students of teachers receiving the training gained more in reading than did the students of teachers who did not receive the training.
- Students' perceptions of the classroom environment were significantly related to the structured observations of the classroom environment.
- The classroom processes found to be related to student gain in Phase II are very similar to those found to be so related in Phase I.
- Processes found to be effective when working with low achieving (1-3 grade level) students were similar in Phases I and II. When these effective processes were used these students with very low entry scores made more gain than students entering with higher ability reading scores.
- Class size is related to student achievement given different ability groups. The low pretest group prospered best in classes of 12-20 students. The moderate pretest group prospered in classes of 15-25, while the higher pretest group prospered in classrooms of 21-30 students.
- Students of teachers who had permanent classrooms made significantly more gain in reading.
- Students of teachers who had reading credentials gained more than students of teachers who had no training in teaching reading.
- In classrooms where teachers provided more interactive and supportive instruction, students were absent less often.
- Teachers who were trained in SRI workshops successfully trained other teachers to implement the SRI classroom process program presented in the workshops.

EXECUTIVE SUMMARY

The impetus for the study of teaching basic reading skills in secondary schools came from national concern for the large number of students being graduated from high schools who were not functionally competent in reading, writing, and computational skills. This problem was brought to national attention by several malpractice suits filed against school systems by parents of graduated students who could not fill out job applications or pass reading exams given by the United States Army (Saretsky, 1973). The first of these suits was in 1972 when "Peter Doe" claimed that his 5th grade reading level at graduation was below the competency necessary for holding a job.

The plummeting test scores from 1957-1975 reported in 1975 by Harnischfeger and Wiley and confirmed by school districts throughout the country stimulated many state legislatures and school boards to draw up lists of educational standards that students in high schools should meet at various stages of their education. The movement has spread so that in 1979 all but four states have regulatory standards and 20 states have a competency test for graduation.

Testing students to assess deficiency in basic skills is useful only if strong remediation measures are taken. In Florida and California, legislation mandates that all students failing the competency test must be provided with school programs that will make it possible for them to gain the skills required to pass the test. The requirement that secondary schools provide remediation for all of these students has had a great impact on school planning. To meet the requirement, remedial classes in reading, writing, and math are being offered, whether or not teachers with appropriate skills are available. Teachers have been reallocated to teach these basic skills classes regardless of their backgrounds. As a result, extensive and intensive inservice training is needed to help these teachers learn how to teach basic skills. It is a difficult task for teachers to change a long history of failure in school into a story of success for secondary students.

What is Needed to Aid Student Learning in Secondary Schools?

The study presented here is unique among research studies in that it provides school districts taking part with a process to use research findings in a regenerative way. The Study of Teaching Basic Reading Skills in Secondary Schools in a three-phase study funded by National Institute of Education. In Phase I we observed 46 secondary reading classrooms selected from six Northern California school districts to examine the relationship between what teachers do and what students gain in reading. The results of this study provided some very specific guidelines for efficient instructional strategies to use with secondary remedial reading students. Of the teachers in the study only 50% had any training to teach reading; thus we prepared a series of inservice workshops to assist teachers to plan and organize reading classrooms. In Phase II we provided these workshops to 47 teachers in the districts where we conducted Phase I of the study plus one neighboring district. One-half of the teachers were trained and the other half were in a control group that did not receive training until the end of the experiment. The workshops were well attended and these teachers did change behaviors in recommended ways. What is more important, their students made more reading gain than did students in the control group. The teachers were enthusiastic about the program and recommended offering the training to other teachers in their districts. To accommodate the requests, which were beyond the scope of our staff, we developed a Phase III program in which we monitored our trained teachers as they trained other teachers in their districts. This three-phase effort left the districts with a cadre of teacher trainers to carry on the process of teaching secondary teachers effective methods of helping students gain basic reading skills.

What Have Other Researchers Found?

Most of the research relating classroom process to student outcomes has been conducted in elementary schools (e.g., Bemis and Luft, 1970;

Good, 1978; McDonald and Elias, 1976; Soar, 1973). The process variable most often found to be related to achievement was student time spent on task. The Brophy and Evertson (1974) study of 7th and 8th grades in Austin, Texas, indicates that efficient teaching strategies are related to student on-task behavior and that misbehavior has a negative relationship with achievement. Stallings and Kaskowitz (1974) in their study of Follow Through classrooms found an interaction between process variables and student cognitive and noncognitive outcomes. Barak Rosenshine (1977) and Donald Medley (1977) have summarized most of the important current studies of teaching effects.

What Works in Secondary Basic Reading Classrooms?

Our hunch when conceptualizing the study was that secondary students would gain more in reading in classrooms where the teacher provided considerable structure and students were on task more of the time. Results from partial correlations conducted in Phases I and II provided ample evidence that these hunches were correct. Through our systematic observations of classrooms we identified several key variables that were related to reading gain measured by the Comprehensive Test of Basic Skills (CTBS).

In each year of the study, we found that students made more gain in classrooms where the teachers spent more time instructing, discussing homework, providing considerable supportive feedback, and having students read aloud in small groups. In this environment, the teacher stayed involved with the students all of the class period. They were well organized and made the most of 45 minutes.

Students made less gain in classrooms where 40-50% of the time was allocated to written assignments, another 30-40% was allocated to silent reading; and teachers graded papers or made lesson plans during class time. This structure does not provide the supportive interaction that remedial students need to make progress. Also, less gain was made by students in classrooms where there were more interactions of a social or disruptive nature.

To optimize student gain, all of these findings suggest that teachers "get the show on the road" when the bell rings and stay supportively involved during the 45-minute period.

Variables found to be positively or negatively related to reading gain during the two years of the study are listed below.

- Positively related to reading gain
  - Discussing homework or the reading content
  - Instructing--new work
  - Drill and practice
  - Students read aloud
  - Focusing instruction on small group or total group
  - Praise and support
  - Positive corrective feedback (rephrase question or probe)
  - Short quizzes
- Negatively related to reading gain
  - Teachers doing organization or management tasks
  - Outside intrusions (loudspeaker announcements, etc.)
  - Social interactions
  - Misbehavior or negative interactions
  - Offering student choices
  - Too much written assignment time
  - Too much silent reading
  - Too much working with one student at a time.

A 10th grade high school student in a remedial reading class could be reading at any level between 1st grade and 8th grade. Believing that effective teaching would differ with students of different reading levels, we looked at our sample of classes to see whether we could identify classrooms that had students who were operating at different levels. By looking at class means or CTBS pretest and posttest scores, we found four groups of classrooms:

Group I	Low Pretest/High Gain (N=4)
Group II	Moderate Pretest/Moderate Gain (N=7)
Group III	High Pretest/Moderate Gain (N=4)
Group IV	No Gain (N=21)

The interesting question then becomes what was occurring in classrooms where more gain was being made. By making comparisons of the observed practices in each group, we learned that Group I teachers had their students reading aloud in small groups more frequently than did the teachers in the no-gain group. Group II teachers more often used a drill and practice mode providing immediate supportive feedback. Teachers in Groups I and II spent most of their classroom time working with the students while teachers in the no-gain group tended to do more classroom management activities (i.e., grade papers, prepare lessons, straighten shelves). There was significantly more misbehavior in the no-gain classrooms. Teachers in all three of the gain groups spent less time working with a single student than did the teachers in the no-gain group; they focused instruction toward small groups or the entire group more often.

Classroom research consistently indicated that working with one student at a time is not efficient. The teacher simply cannot get around to everyone during a 45-minute period. In classrooms where teachers do spent more time working with one student there is a higher rate of misbehavior, suggesting that necessary guidance and supervision is lacking for the other students.

Can Inservice Teachers Change Their Teaching Style?

We developed six inservice workshops based upon specific findings in Phase I. The workshops were based upon the idea that teachers will use what is practical and will make their life and the students' lives a little easier and more interesting. Therefore we planned to provide a few ideas gleaned from research findings and to ask teachers to try the recommendations in their own setting.

Workshop sessions were conducted one week apart, usually from 3:30-6:00. To maximize participation, the groups were limited to five or six teachers. Workshops were provided around the following topics:

Workshop 1: Discuss Phase I findings and implications.

Workshop 2: Provide profiles for each teacher's observed behaviors and make prescription for change.

Workshop 3: How to organize classrooms and manage time.

Workshop 4: How to motivate students and manage behavior.

Workshop 5: How to diagnose student reading-related problems and select materials.

Workshop 6: Interpret second observation profile and see how each teacher's behavior changed.

Throughout all workshop sessions the SRI leader encouraged group interaction among the participants. The tone of the workshops was one of support. Teachers were not lectured to; they were encouraged to share opinions, experiences, and problems. The opportunity to discuss problems encountered in their classrooms in a supportive, nonevaluative environment was an aspect of the workshops that all teachers stated was very positive and unique in their experience of inservice training.

When classroom behavior of treatment and control group teachers was compared, we found that the treatment teachers had implemented 25 out of 31 study variables, while the control group implemented only 7 of these variables. What is more important, the students in the treatment group classrooms gained more in reading.

How Can the Training Be Disseminated?

At the conclusion of Phase II we were besieged by many school districts to provide these inservice programs which had proven effective. To meet these requests, in Phase III we experimented to see whether teachers trained in Phase II could train other teachers to use the processes recommended by the research findings. We found teachers were able to provide adequate training to their peers. Thus, we have provided districts with their own trained personnel who can train other teachers. In addition to this, we have trained interns from state and federal teacher centers who can provide the SRI inservice training to their constituents. The training the interns provide will be monitored by audio tapes and observations of the procedures by SRI staff.

Although we have workshop materials, the cornerstone of the workshops is the process where teachers are encouraged to try new ideas and are supported in their efforts. Each teacher operates in a unique situation. Class size, room assignment, and school policies will affect how recommendations can be carried out. The trainer must listen and respond to teachers' questions and ideas and help modify the recommendations to accommodate each teacher's situation.

How Can School Administrators Help?

Through listening to teachers in training we learned of several school policies that affect the teacher's ability to teach. The suggestions that follow are derived from our research on teaching basic reading skills in secondary schools and from a survey of nearly 140 teachers who have taken part in these studies from 1976 through 1979.

Statement of School Rules

A clear statement of rules is needed regarding tardiness, absenteeism, and misbehavior. The rules need to be consistently applied. In schools where this is not the case, teachers report difficulty in establishing and keeping their own rules. Lack of school rules creates problems for students who have to respond to the different limits set by different teachers. Morale is reported to be lower and misbehavior, tardiness, and cuts are more frequent in schools without clear policies on these issues.

Intrusions

Research indicates that classrooms having more intrusions from the outside (i.e., announcements on the intercom, requests for students, or passing out school papers) have students who make less gain in basic reading skills (Stallings et al., 1978a). Other school personnel (counselors, school paper editors, drama coaches, physical education coaches, music directors, detention officers) may not appreciate how difficult it is to get a classroom of low ability reading students on task and being productive, and how easy it is for them to get off task. When interruptions are allowed during class time, it implies to the student that what is occurring in the classroom lacks value.

School administrators can establish clear guidelines about the sacrosanct nature of classroom teaching: i.e., if we are serious about teaching basic skills, no one disturbs a teacher when class is in session. Nothing less than a cataclysmic event should stop the teacher in process. An administration procedure might be to allow 10 minutes for announcements at the beginning of the day rather than to take 10 minutes for announcements from any one class period.

Grading System

A variable grading system needs to be established for the remedial classes. Students who have a history of failure thrive best when they can experience daily success, for example, in programs that are set up to allow these students to make daily gains and to achieve 80% to 100% correct scores on their exercises. These students will be overwhelmed with a sense of failure if, regardless of gains, they receive a D or F on their report cards because they are still below grade level. Such a policy causes low student and teacher morale.

In view of this, teachers suggest several alternative grading systems:

- The course could be identified by name as a basic skills course for improvement in reading and give A, B, C, D, or F on the basis of the student's progress in the course.
- Variable credit could be earned on the basis of productivity. The number of units earned would be based upon work completed; the grade would be based upon the quality of work.
- Excellent, satisfactory, or no progress could be shown by giving E, S, or N for productivity and effort.

Assignment of Classrooms

Assignments of classrooms are sometimes made on the basis of seniority rather than need. To teach effectively, teachers of basic reading skills should be assigned permanent rooms. They need to be able to arrange a reading environment where student growth charts can be kept on the wall so that students can keep track of their progress. Reading teachers need to have diagnostic and prescriptive materials at their fingertips as well as many high interest books at the right reading level. Teachers who have to shift from one classroom to another cannot achieve an environment conducive to developing basic reading skills. Our research indicates that basic reading skill teachers who have permanent classrooms have students who make more real gain.

Student Information

In the past we have been reluctant to make test scores easily available to teachers, believing this information might prejudice teachers' attitudes toward students. However, teachers need information about students' reading problems and their reading level at the time classes are assigned in order to plan an appropriate program. Most teachers surveyed do not have student information easily available. Teachers feel that their ability to select materials based upon student needs would be increased if at least the reading levels of students were printed on the class lists.

To get the reading scores, most secondary teachers must go through the counselors' files and record the data available for each of the 100-150 students in their classes. This requires 5-10 minutes per student or about 20 hours. After searching the records, they may find the test information is out of date or not available for many students. The testing program tends to be limited in many secondary schools. If schools do not have up-to-date, easily accessible test data, teachers need inservice workshops to learn how to obtain the student information that will allow them to plan an appropriate program for the students assigned to their classes.

Assignment of Students to Reading Classes

School policies regarding the assignment of students to classes should take into account the ability level of the student as well as the subject being taught. Teachers report higher morale in schools where there is a variable policy regarding the number of students assigned to classes and homogeneous or heterogeneous grouping. In secondary schools, our research indicates that low ability students gained more in basic reading skills when they were in classes of 15-20 and were homogeneously grouped. Higher ability students could function well in classes of 25 that were heterogeneously grouped.

Reading in the Content Area

A school policy is needed regarding reading in the content area. Teachers who try to teach reading in the content area need textbooks that provide similar information at different reading levels. Most often such materials are not available. In that case the teacher has few options.

- Teachers may attempt to write their own materials for the students with low reading ability. Several teachers could share this responsibility.
- Teachers may try to locate audio tapes of the textbook (some states produce these for use with the blind). In one school the drama students read the text on audio tapes and these were used by remedial reading students.

If school administrators or curriculum staff do not deal with the problems of adequate reading materials, many students with low reading ability will not receive the information in social studies, science, and math that is necessary to cope in our society.

Good News

The good news emanating from this three-phase study is that teachers can and do make changes in organization and management style when the changes are practical and can be adapted to their own environments. The dissemination plan works: teachers can teach other teachers to use these classroom processes, enabling the school system to provide low-cost in-service training.

The other good news is that students of low reading ability need not be doomed to failure. Given appropriate teaching methods they can and do make substantial gains during a school year. The important message for administrators, teachers, and students is not to give up. When teachers and administrators are committed to establishing a learning environment, low ability students are more likely to become committed to their own education. Such commitment results in gains toward achieving basic skills that will allow these students to cope in society.

PHASE II

FINAL REPORT

I INTRODUCTION

Background and Rationale for the Study

The impetus for this study of Teaching Basic Reading Skills in Secondary Schools funded by National Institute for Education (NIE) came from national concern for the large number of students being graduated from high schools who were not functionally competent in reading, writing and computational skills. This problem was brought to national attention by several malpractice suits filed against school systems by parents of graduated students who could not fill out job applications or pass reading exams given by the United States Army (Saretsky, 1973).*

The plummeting test scores were graphically reported in 1975 by Harnischfeger and Wiley (see Figure 1). This drop in scores from 1965 to 1975 stimulated many state legislatures and school boards to draw up lists of educational standards that students in high schools should meet at various stages of their education. The movement has spread so that in 1979 all but four states have regulatory standards and 20 have a competency test for graduation.

To the dismay of many school districts and state legislatures, many more students than expected failed the competency exams. In 1977 Florida's Department of Education gave the first state-wide test and made graduation conditional on passing: 91% of the 11th graders passed the English test but only 64% passed the mathematics test. Most of those failing the test were minority students. In fact, only 23% of the Black students taking the math test passed it and only 74% passed the communications section. This raised questions about whether the test and program were discriminatory. In 1978 ten Black students filed

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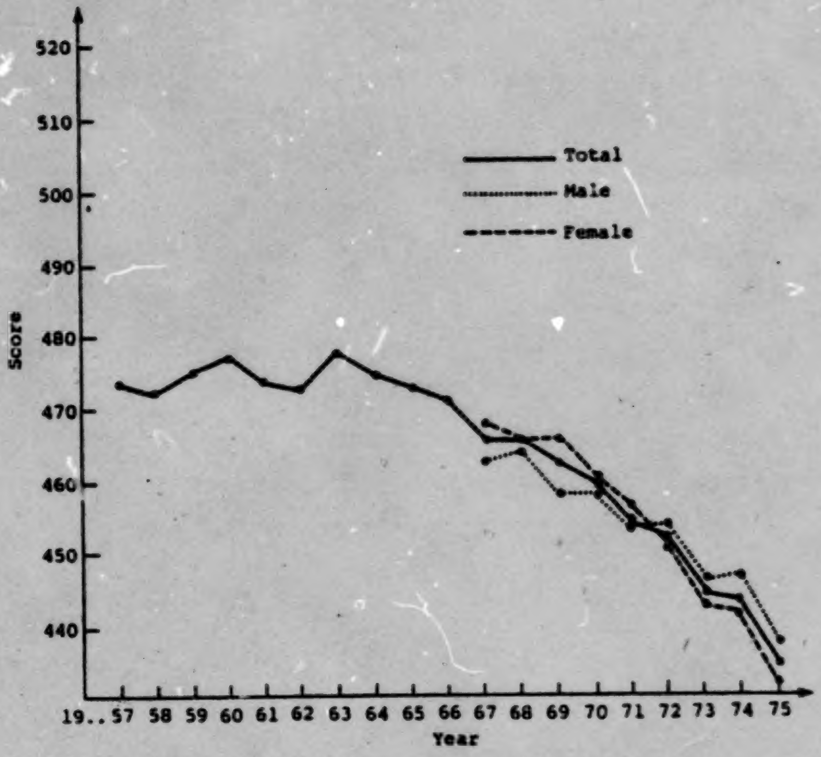
*The first of these suits was in 1972 when "Peter Doe" claimed that his 5th grade reading level at graduation was below the competency necessary for holding a job.



Source: Annegret Harnischfeger, and David E. Wiley, *Achievement Test Score Decline: Do We Need to Worry?* (Chicago: ML Group for Policy Studies in Education, CEMREL, Inc., 1975).

FIGURE 1 MEAN VERBAL SCHOLASTIC APTITUDE TEST SCORES FOR COLLEGE-BOUND SENIORS, 1957–1975

suit against the State of Florida charging the literacy test was unconstitutional because a disproportionate number of Black students failed it.

The cost of helping students to become competent is great. In 1978 the Florida Legislature passed a Compensatory Education Act and provided $10 million in supplemental aid to school districts to set up remedial programs for students who failed the competency test in 1977 and 1978. Districts placed top priority on compensatory programs for 11th grade students who must pass the state's final high school competency test in order to receive diplomas. Florida officials were delighted to find a substantial return on their investment. In October 1978, 40% of the Black juniors passed the math section and 89% passed the communication section.

Testing students to assess deficiency in basic skills is useful only if strong remediation measures are taken. In California, the Hart Bill legislation mandates each school district to compose its own competency exam so that by 1980 no student will graduate from California schools without passing that exam. The law also mandates that all students failing the test must be provided with school programs that will make it possible for them to pass the test. The failing student and parent are required to meet with a representative from the school and all participants must take responsibility for the student's progress.

The section of the Hart Bill requiring secondary schools to provide remediation has had a great impact on school planning. To meet the requirement, remedial classes in reading are being offered whether or not credentialed reading teachers are available. Teachers have been reallocated to teach basic reading regardless of their backgrounds. As a result, extensive and intensive inservice training is needed to help these teachers learn how to teach basic reading. It is a difficult task to change a long history of failure to read into a story of success for secondary students.

This study is dedicated to learning how basic reading can best be taught in secondary schools and to developing inservice workshops wherein practices found to be efficient can be shared with secondary teachers who are teaching reading.

The study has been conducted in three phases. This report reviews the findings of Phase I and presents findings for Phases II and III.

Phase I

Being aware that remedial reading courses were increasing in secondary schools, the authors of this study made two hypotheses:

- That some secondary teachers would be more successful than others at teaching basic reading skills.
- That the more successful teachers would be using some very structured teaching approaches that research on teaching in elementary school classrooms has identified as related to reading gains.

Most of the research relating classroom process to student outcomes has been conducted in elementary schools (e.g., Bemis and Luft, 1970; Good, 1978; McDonald and Elias, 1976; Soar, 1973). The process variable most often found to be related to achievement was student time spent on task. The study of 7th and 8th grades in Austin, Texas, by Evertson, Anderson, and Brophy (1978) indicates that efficient teaching strategies in math classes are related to student on-task behavior and that misbehavior has a negative relationship with achievement. Stallings and Kaskowitz (1974) in their study of Follow Through Classrooms found an interaction between process variables and student cognitive and non-cognitive outcomes. Barak Rosenshine (1977) and Donald Medley (1977) have summarized most of the important current studies of teaching effects.

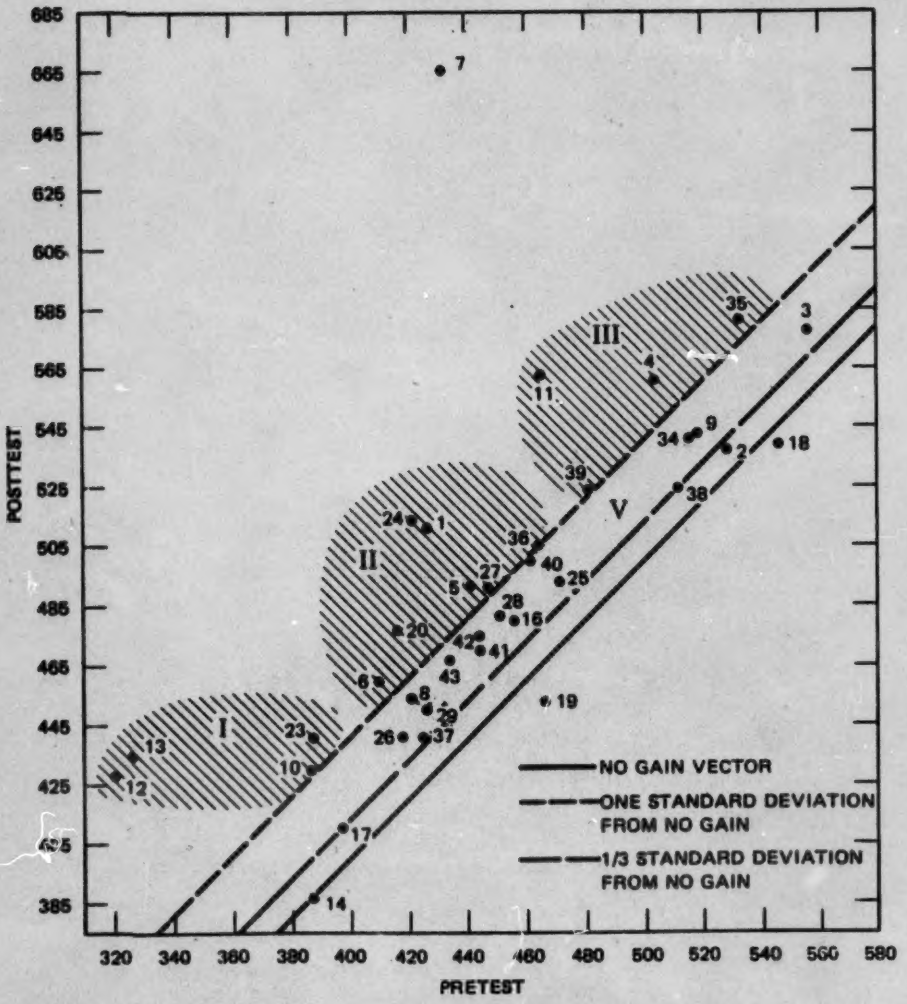
Phase I of this study documented the classroom instructional processes of 43 secondary teachers representing 6 school districts. Through observations and questionnaires we identified several key variables that were related to reading gain on the Comprehensive Test of Basic Skills (CTBS) and to student absence rate.

A surprise finding was that only 19% of the teachers assigned to teach reading were credentialed reading teachers. They were trained to teach physical education, typing, English or science, but not reading. Another surprise was that students in reading classes varied widely in reading ability. Some classes had most students reading at a 1st to 3rd grade level; others had students reading at 4th, 5th, or 6th grade level; yet others had students ranging all the way from 1st grade reading to 13th grade reading. Interestingly, the students who were more homogeneously grouped made more gain in reading. Further, the students scoring over the 49th percentile on the pretest CTBS gained the least. They seemed to be used for tutors for the less able students.

Believing that effective instruction would differ with students of different reading levels, we identified four subgroups of classrooms on the basis of pretests and posttests (see Figure 2). Groups I to IV ranged from high gain (Group I) to no gain (Group IV). Through an analysis of variance we found that the four teachers in Group I (low pretest and high gain) were conducting their classes differently than were the seven teachers of Group IV (no gain) classrooms. Also, the teachers in Groups II and III (moderate gain) were using their own unique set of instructional practice.

Primarily Group I teachers had their students reading aloud in small groups more frequently than did the teachers in the no-gain group. Group II teachers more often used a drill and practice mode providing immediate supportive feedback. Teachers in Groups I and II spent most of their classroom time working with the students while teachers in the no-gain groups tended to do more classroom management activities, i.e., grade papers, prepare lessons, straighten shelves. Teachers in all three of the gain groups spent less time working with a single student than did teachers of the no-gain group; they focused instruction toward small groups or the entire group more often.

Classroom research has consistently indicated that working with one student at a time is not efficient. The teacher simply cannot get



Group I - Low Pretest/High Gain
Group II - Moderate Pretest/Moderate Gain
Group III - High Pretest/Moderate Gain
Group IV - No Gain

FIGURE 2 SCATTERGRAM OF PHASE I PRETEST AND POSTTEST — CTBS SCORES

around to everyone during a 45-minute period. In classrooms where teachers do spend more time working with one student there is a higher rate of misbehavior, suggesting that necessary guidance and supervision is lacking for the other students.

Implications for Phase II

Based upon the findings reported in detail in the final report of Phase I, we developed five inservice workshops for secondary teachers. Our hunch was that the processes identified in Phase I could be taught to an experimental group of teachers. This report describes the Phase II design, the sample, the instruments, the data collected, the analysis and findings.

II PHASE II DESIGN

The purpose of Phase II was to conduct an experiment where a group of teachers would be trained to use a set of instructional processes identified in Phase I as being effective in teaching basic reading skills to secondary students. The behaviors of these teachers and the progress of their students were compared with a control group of teachers and students. To conduct the experiment, we contacted the six participating school districts from Phase I, and invited their participation in Phase II. All districts agreed to take part and two other districts asked to be included, making this a sample of 47 secondary teachers representing eight districts.

Assignment of Teachers to Groups

Based upon the fall student reading test data, teachers were assigned to either a treatment group to receive training immediately, or a control group to receive training after spring data collection at the end of the study. Two criteria guided the selection of teachers for the groups. We wanted some teachers in the control group and some in the treatment group from each district. We also wanted an equal distribution of classrooms in the treatment and control groups by level of the entering reading ability of the students in the class (i.e., class mean score low, medium, or high as defined in Phase I). This distribution was reasonably even with 26 treatment classes and 25 control classes. Table 1 illustrates the assignment of teachers to groups by district. Each teacher was then instructed to select one A.M. class for study. We made this recommendation because teachers report that A.M. classes tend to be more productive.

Table 1

ASSIGNMENT OF TEACHERS TO TREATMENT AND CONTROL GROUPS

District/ School	Group I Low Pretest Treatment	Group I Low Pretest Control	Group II Medium Pretest Treatment	Group II Medium Pretest Control	Group III High Pretest Treatment	Group III High Pretest Control
Fresno						
Sr. High 1	1	--	--	--	1	2
Sr. High 2	--	--	--	--	2	1
Jr. High 3	--	1	--	--	1	--
Monterey						
Sr. High 1	--	--	--	--	1	--
Sr. High 2	1	--	--	--	--	1
Jr. High 3	1	1	1	--	--	--
Jr. High 4	1	1	--	1	--	--
Ravenswood						
Jr. High 1	2	1	--	--	--	--
Salinas						
Sr. High 1	--	--	1	1	--	1
Jr. High 2	1	1	1	1	1	1
Sr. High 3	--	--	1	1	--	--
San Jose						
Jr. High 1	--	1	--	--	1	1
Sr. High 2	--	--	1	--	--	1
Sr. High 3	1	--	--	1	--	--
Sequoia						
Sr. High 1	--	--	1	--	--	--
Tulare City						
Jr. High 1	--	1	1	1	1	--
Jr. High 2	--	--	--	--	--	1
Tulare Union						
Sr. High 1	1	--	1	1	--	--
Sr. High 2	--	1	--	1	1	--
Total number of classrooms	9	8	8	8	9	9

Data Collection and Workshops

Achievement tests were administered fall, winter and spring to the students in each selected class, and all teachers were observed during that class for three consecutive days in the fall, in the winter and in the spring. Teachers and students responded to questionnaires during fall and spring.

After the fall testing and observations, four inservice workshops were provided at each location for the treatment groups. Based on the observations, recommendations were made for each treatment teacher to increase, decrease or stay the same on 34 classroom behaviors. In January, at the end of the fall semester, all teachers were observed again and the fall-observed behaviors of treatment teachers were compared with their winter-observed behaviors. In February, recommendations were made to treatment teachers for continued behavior change. At their request, an all-day meeting was held at SRI in April. The treatment teachers from the 8 districts attended. This refresher meeting was held just prior to the last data collection in May. Altogether the training included five 2-hour training sessions and one all-day session during the year. Two training sessions were conducted for the control teachers in May.

Comparisons were made between the treatment and control groups to examine the following hypotheses:

1. Teachers who participate in the inservice workshops will use the prescribed behaviors by increasing or decreasing the specific activities as recommended by the SRI trainers.
2. Based on observations, the recommended behavior changes will be sustained from February until May.
3. Adaptation of the recommended changes in teaching behaviors by the treatment teachers will relate to greater gain for students in the treatment classrooms.
4. Correlational findings from Phase II will be similar to those in Phase I.

III PHASE II SAMPLE

Selection of Districts

On August 16, 1977, a planning meeting for the eight participating districts was held at SRI. In addition to the six districts that had participated in Phase I, two districts (San Jose Unified School District and Tulare Union High School District) expressed an interest in the study, and representatives from those two districts also attended the meeting. The participating districts included:

- Fresno Unified School District
- Monterey Unified School District
- Ravenswood Elementary School District
- San Jose Unified School District
- Salinas Unified School District
- Sequoia Union High School District
- Tulare City Elementary School District
- Tulare Union High School District

These districts satisfied three main criteria:

- That each district offer remedial and/or compensatory programs in basic skills areas at the junior or senior high school level.
- That a mix of urban, suburban, and rural school districts be represented in the total sample.
- That the districts be located in Northern California (to minimize travel and other data collection expenses).

Recruitment of Schools and Teachers

SRI staff went to each district to discuss the study with teachers of reading and to ask for their participation. Of the teachers who agreed to participate, 27 had been in the study in Phase I. Although 51 initially agreed to participate, 46 classrooms and 47 teachers were in the final sample in Phase II. (One classroom had team teaching.)

The four that dropped from the original design were all control group classes. It was somewhat difficult to maintain the interest and cooperation of the control teachers. They all wanted training and thus we promised to provide training in the spring after data collection. The distribution by district of the classrooms participating in Phase II is shown in Table 2. The representation from the eight districts is very uneven; therefore, no analysis was conducted at the district level.

Table 2

NUMBER OF PARTICIPATING CLASSROOMS BY DISTRICT

District	Junior High Classrooms	Senior High Classrooms	Total
Fresno	2	7	9
Monterey	6	3	9
Ravenswood	2	-	2
Salinas	5	4	9
San Jose	2	4	6
Sequoia	-	1	1
Tulare City	5	-	5
Tulare Union	-	6	5
Total	22	24	46

Site Descriptions

The following site descriptions provide a setting for the study. The information describes the size of the school districts, the ethnicity of the school sample, and the amount of school funds available. These demographics indicate the sites are quite different. Two are in large suburban areas; four are in rural areas. The populations range from predominantly Black, to predominantly White, to mixtures of Black, White and Hispanic. The one thing all districts have in common is a large number of secondary students who need remedial reading classes and a compensatory education program aimed at helping these students.

Fresno

Fresno is a large industrial and agricultural community located in the central valley. The school district is unified and includes 54,749 Black, White, and Hispanic students. The nine teachers in our sample are located in one junior high and two senior high schools. The schools range in size from 600 to 1,200 students. The students in the schools differ considerably. In the largest school 10% of the students have limited English speaking ability while in another school there are no students with limited English speaking ability. The percentage of students from low income families ranges from 79% to 20%. Because the students represent such different populations, the court ordered a busing plan to be in effect by fall 1978.

Although the school district allocated $1,331 per student, all three schools have funding from several categorical aid programs. The lowest of these funds, $441, boosts the total student expenditure to $1,772 for the 92% of eligible students in one of the schools.

Monterey

Monterey is a moderate-size resort and agricultural city located on the Pacific coast. The total school district includes 15,397 students. Six teachers from two junior high schools and four teachers from two high schools were included in the study. One of the high schools is a continuation school. The two junior high schools are very similar in their number of students with limited English speaking ability (5%) and in their percent of low income families (3%-4%). The students are predominantly White and Hispanic.

The school district allocates $1,400 per student. One of the schools in our sample receives additional funds from categorical aid programs.

Ravenswood

Ravenswood is a small elementary school district located in San Mateo County. It is not in an incorporated city. The area is primarily industrial and residential. The school district has 3,406 students, most of whom are Black. Three teachers from one junior high school are included in this study. The percentage of students from low income families is 43%.

The school district allocated $1,152 per student. In addition, the school has $268 per student from three categorical aid programs.

Salinas

Salinas is a moderate-size city located 30 miles from the Pacific Ocean in the heart of an agricultural area. The school district has 15,447 students who are predominantly White and Hispanic. The 11 teachers in our sample are located in one junior and two senior high schools. The student population is similar in the junior high and one senior high school. Approximately 15% of the students in both schools have limited English speaking ability and 16% are from low income families. The other senior high, the largest school in the district with a student population of 2,400, has approximately .5% of its students with either limited or no English speaking ability.

The school district spends $1,475 per student. In addition, the schools receive $401 to $461 per eligible student from categorical programs.

San Jose

San Jose is a large city located 50 miles south of San Francisco. There are 50 schools in the San Jose Unified School District and a total student enrollment of 36,753 in grades kindergarten through 12. Three of the teachers in the study teach in a junior high school with an enrollment of 1,637. Two high schools are participating in this study, with two teachers from each school. The student population is primarily White. Approximately 1% of students in these three schools have limited English speaking ability.

The district allocates $1,458 per student.

Sequoia

Sequoia Unified High Schoool District is in San Mateo County. The school district serves 10,535 high school students in five high schools in five different small cities. Students in this district can attend any one of the five schools by requesting a transfer. The one teacher in our study is in a school with very few students with limited English speaking ability. The student population is predominantly White with some Black students.

The district spends $1,975 per student which is more than any other district in the sample. The school receives no additional funds from categorical aid programs.

Tulare City Schools

Tulare is a small rural town in the central valley. The city school district has 4,427 students, including those in elementary and junior high schools. The high schools are in a separate school district. All five of the teachers in this study are located in two junior high schools. Each of these schools has approximately 500 students. However, one of the schools has twice as many students from low income families. The school population is primarily White.

The school district spends $1,039 per student. This is less than all other districts in the sample, and these two schools do not receive any additional funds from categorical aid programs.

Tulare Union High Schools

The Tulare Union High School District has 2,890 students in two high schools and one continuation school. The six teachers in the study are from the two high schools. Of the total student population, 25% are Hispanic, 12.8% are Portuguese, 6.8% are Black and the remainder are White. Less than 1% of the students have limited English speaking ability.

IV INSTRUMENTS

In order to identify the reading level of students in each class (low, medium, high) and to assign teachers to groups, a secondary comprehensive reading test was developed by SRI. Since several of the school districts did not have a regular testing program, it was necessary to administer our own test. To describe the classroom processes, a classroom observation instrument was adapted and two student rating instruments were selected. Student outcomes were assessed by means of an achievement test given by the school district and by student absence data. A teacher questionnaire was administered to determine whether there were differences in teacher attitudes between the treatment and control groups of teachers before and after the teacher workshops. All of these instruments were also used in Phase I except the SRI Reading Comprehension Test. The instruments are included in Appendix A.

Achievement Tests

SRI Reading Comprehension Test

A reading test based on the California Achievement Test (CAT) was developed at SRI. The CAT has five levels of tests. Items were selected from each level of the vocabulary and reading comprehension subtests. At the lower levels, stories in reading comprehension with content directed toward elementary school children were modified to appeal to secondary school students. Permission was obtained from CTB/McGraw-Hill to use and modify these items.

District Achievement Tests

The total reading score from district testing was used for the students' measure of achievement from spring 1977 to spring 1978. The SRI Reading Comprehension Test was administered fall, winter, and spring but the sample of students diminished appreciably from fall to spring.[*] We considered using winter 1978 to spring 1978 scores, but preferred to try to replicate the Phase I study which used spring to spring Comprehensive *Test of Basic Skills (CTBS)* scores.

District achievement scores were obtained for as many students as possible who were in the sample classrooms in the spring of 1978. All school districts used the CTBS except Fresno. Fresno administered the CAT. For the districts with CTBS data, a conversion program was written, converting scores from the various forms and levels (Forms R, S, T, and Levels 2, 3, 4) to Form S normalized scores.

For the CAT scores from Fresno, the conversion consisted of a two-stage process. The test publishers did not have available conversion tables for CAT to CTBS; however, they did have the correlations of CAT with the Short Form of the Test for Academic Achievement (SFTAA) and the correlations of SFTAA with Form S of the CTBS. Regression estimates of SFTAA were made using the CAT. These SFTAA estimates were then used to estimate the Form S CTBS scores.

Scores were collected for each student in the spring of 1978, and for each student his or her score for spring 1977 was also obtained; conversions were done for both sets of scores.

Classroom Process Instruments

SRI Secondary Observation Instrument

The SRI Secondary Observation Instrument (SOI) is based upon previous observations systems developed at SRI. As a result of workshops conducted with teachers in Salinas, California during 1975 and 1976, revisions were made in the instrument to permit the recording of events that occur in junior and senior high school classrooms. It was used successfully in secondary classrooms in Phase I.

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[*] See Section V for sample size.

The SOI provides a record of instructional and social activities that occur in the classroom. It records the materials being used and the interactions between teachers and students. The observer focuses on the lead teacher and records all persons with whom he or she interacts.

The SOI contains four sections. The first section, Identification Information, identifies the schools, teachers, and classes. The second section, Classroom Summary Information, records the number of adults and students attending regularly in the classroom.

The third section is the Classroom Snapshot. The Snapshot is a matrix that yields data about the activities of each adult and student in the classroom, the size of the group, and the materials being used. From this record, information is obtained on how the teacher spends his or her time and with whom, how the aides spend their time and with whom, and how often the students work independently and in what activities.

The fourth section, the Five Minute Interaction (FMI), is used to record the teacher's verbal interactions or nonverbal behaviors. It consists of a series of frames in which each behavior/interaction is recorded in the four categories provided: Whom, To Whom, What, and How. (WHO - initiates a behavior TO WHOM, WHAT - is the behavior, and HOW - describes the behavior.) Consecutive frames can record continuous interactions.

Each observation booklet has one Identification Information and Classroom Summary Information form and five sets of the Classroom Snapshot and Five Minute Interaction settings.

Classroom Environment Scale

The Classroom Environment Scale, Form R (Moos and Trickett, 1974), was selected to examine students' perceptions of the instructional process occurring in the classroom. This particular scale was normed on a sample similar to the sample population. It yields nine subscales of four items each and can be completed in approximately 10 minutes. The subscale reports the student's perceptions of (1) involvement, (2) affiliation with others in the class, (3) receiving teacher support, (4) task orientation, (5) competition, (6) order and organization, (7) rule clarity, (8) teacher control, and (9) teacher innovation. In addition to these nine scales, two new scales were added by SRI to examine attendance and self-esteem. Both of these scales had four items each. Therefore, students were asked to complete 44 items producing eleven subscales.

In order to be certain that the results were not influenced by the student's skill in reading, each of 44 items on the scale was read aloud by the SRI data collector and the students checked the True and False column. The teacher was not present in the room at the time of the testing and students were assured that no one but the SRI staff would see the ratings.

Student Rating Scale of Instructors

The Student Rating Scale of Instructors was developed in 1973 by the Sequoia High School district. Students are asked to rank their instructor on 16 variables on a scale of 1 to 5. On the basis of content, four subscales were developed: teacher professionalism, individual attention received, fairness, and enjoyment of class. This rating scale was also read to the students by the SRI data collector in the teacher's absence.

Other Instruments

Absence Rate Form

Attendance data were obtained from the classroom teacher. A form was developed by SRI which listed each student by name and an identification number, student's entry and leaving date in that class, and total number of days absence--categorized by excused absence, unexcused absence and cuts. The total number of school days was also recorded.

Teacher Questionnaire

To see whether teacher attitudes toward instruction changed from fall to spring, a teacher questionnaire was prepared. The questionnaire contained two scales, to measure the teacher's attitude toward:

- Classroom management (structure and flexibility)
- Use of instructional techniques.

The questionnaire was shortened for Phase II so that teachers could complete it within 10-15 minutes.

V PHASE II DATA COLLECTION

One of the primary concerns of this study was to collect data that described teacher behaviors and classroom settings accurately. The value of this study depends on reliable data. Thus, it was essential that the data be gathered in a consistent fashion in all classrooms at all sites. To do this, staff were carefully selected, training procedures were developed, and the reliability and validity of the instruments were checked. Members of the SRI data collection team have extensive experience in data collection in addition to their backgrounds in education and research. They have been trained in the specific operations necessary to guarantee the standardization of procedures.

Selection of Classroom Observers

Participating school districts selected people who they felt would be accepted by target teachers as observers in their classrooms. All observers were credentialed teachers; some were retired and other were regular substitutes. Observers were trained from Monterey, Salinas, San Jose and Tulare. The Fresno Unified School District agreed to allow the observers from Tulare to observe in the Fresno classrooms. SRI staff observed in the classrooms in Ravenswood and Sequoia districts.

Of the eight observers who collected data during the fall, four also participated in the winter data collection (two from Salinas and two from Tulare). Two new trainees were hired from the Monterey area to observe in Monterey and one trainee was hired from the San Jose area to observe in the San Jose schools.

In the spring, only two of the original observers were available to collect observation data. Thus, six new observers were trained.

Training of Classroom Observers

Fall 1977

Those selected as observers received a home training kit with materials to be studied seven days before the observation training session. Trainees were required to memorize the definitions and to have a thorough understanding of all codes by the first day of training.

Observation training sessions began on September 14, 1977 at SRI, Menlo Park, with eight trainees in attendance for the eight-day session. A major purpose of the training sessions was to expose the trainees to as many different examples of classroom situations as possible and to allow discussion of how these events would be coded on the observation system.

Most of the training time consisted of showing videotapes of actual secondary classrooms, coding the tapes with the observation system, and discussing any questions or confusions that arose from the coding.

The eighth day was devoted to the logistics of the study. Observers were given their observation schedules and materials. Observers were scheduled for five consecutive days in each classroom: three days of observation, followed by two days for administration of the reading tests and student and teacher questionnaires. Observers were instructed in the procedures for administration of these tests and questionnaires.

Observers were given envelopes for returning the data to SRI. They were told to return all material for each class (observation booklets and teacher questionnaires) as they were completed. Observers were also instructed to call SRI should any problems arise.

Suggestions were made for establishing and maintaining rapport with the school administrators, teachers, and students. Observers were instructed to respect the confidentiality of the data and were told not to make any judgmental comments to teachers--either positive or negative--regarding the classroom envirbnment. Observers were instructed to be as unobtrusive and neutral in their attitude as possible.

Winter 1978

As in the fall, each trainee received a home training kit before the observation training session. The training session began on January 3, 1978 in Menlo Park. A five-day training session was conducted for those who had observed in the fall. The new trainees had a seven-day training session. Of the seven trainees who were hired for winter data collection, two did not complete the training because of illness. Thus, only five trainees completed the session. The method of training was the same as that used in the fall training session.

Spring 1978

Observation training for spring data collection was conducted for seven working days, March 28 to April 5. The two trainees who had previously collected observation data attended the session for the last three days. The other six trainees attended the session for the full seven days. Training procedures used in the previous observation training sessions were follwed as consistently as possible. To ensure consistency in the data collection, the same training materials and code definitions were used.

Data Collection

Fall 1977

Field data collection activities began Monday, September 26, and concluded Tuesday, October 25. Classroom observations were conducted for three consecutive school days in each classroom, and the SRI Reading Comprehension Test and the Student Rating Scale of Instructors were administered to students on the day following the observations. On the fifth day, approximately fifteen minutes of class time were required to administer the Classroom Environment Scale to students. Teachers completed the Teacher Questionnaire while their students were tested on the fourth and fifth days of data collection. Table 3 shows the number of students for whom data was collected for each semester.

Table 3

NUMBER OF STUDENTS AND TEACHERS EVALUATED*
(Fall, Winter, and Spring)

	Total Number of Students			
Instrument	Spring 1977	Fall 1977	Winter 1978	Spring 1978
Student Rating Scale of Instructors		878		680
Classroom Environment Scale		866		682
SRI Reading Comprehension Test		902	720	733
Comprehensive Test of Basic Skills	381			381
Absence Rate Form			755	765
Teacher Questionnaire		43		43
Total Number of Different Students Tested			1,441	

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*Students by district and classroom may be found in Appendix B.

Winter 1978

The classroom observations began January 9, 1978. For the first two weeks of data collection, only the control teachers were observed since teachers in the treatment group were still involved in the workshops. Following completion of the fourth workshop, observations of the treatment group were begun.

To provide as complete information as possible, attendance data were collected as near the end of the semester as was feasible. Individual student attendance data were collected from 42 of the 46 classrooms in the study between January 30 and June 21, 1978.

Spring 1978

Observations were conducted between April 6 and May 5. Each teacher was observed for three days. A total of 47 teachers were observed. Four of the original 51 teachers participating in the study were no longer teaching.

Testing began immediately after the completion of observations. Two days of testing were required for each of the 46* classrooms. Testing was completed by the end of May. Tests and questionnaires administered to students during the spring data collections were the same as those administered during the fall. Each teacher was asked to complete the Teacher Questionnaire, and attendance data was collected as had been done during the winter.

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*Two of the 47 participating teachers were team teaching in the same classroom.

VI PHASE II WORKSHOPS

Workshop Schedule

Workshops were scheduled to be held in Salinas, Monterey, Fresno, and Menlo Park. Teachers in each location could choose the time of day for the sessions. In all districts but Salinas, teachers chose after school hours (from 4:00 to 6:00 p.m.). Teachers in Salinas were released for 2 hours time and the workshops were held from 12:30 to 2:30 p.m. Two SRI staff members (Jane Stallings and Margaret Needels) conducted all sessions. Two sessions were conducted during the weeks of November 28 and December 5 and two were conducted during the weeks of January 9 and 16. The teachers in Tulare traveled to Fresno for the first two workshops. Since this appeared to be an unfair burden for these teachers, in January the trainers went to Tulare as well as Fresno for the sessions. Separation of the Fresno and Tulare teachers reduced the group size to five teachers in each session, which allowed each teacher more participation. The contents of the workshops were as follows:

Workshop I - Report on Phase I findings, discussion of teacher profiles and recommendations made to teachers.

Workshop II - Behavior management.

Workshop III - Classroom organization.

Workshop IV - Direct teaching method and motivation of students.

Workshop V - Discussion of teacher profiles based on winter observation.

Before each of the first four workshops, teachers were mailed the training packet for that specific workshop. This offered teachers the opportunity to read the materials before the workshops and time at the workshops could be used more constructively by discussing and elaborating on ideas contained in the materials.

Throughout all workshop sessions the SRI leader encouraged group interaction among the participants. The tone of the workshops was one of support. Teachers were not lectured to; they were encouraged to share opinions, experiences and problems. The opportunity to discuss problems encountered in their classrooms in a supportive, non-evaluative environment was an aspect of the workshops that all teachers stated was very positive and unique in their experience of inservice training.

Workshop I

The packet for Workshop I summarized the findings from Phase I of the study and gave the teachers an overview of the workshop sessions. At the session, teachers were given their individual profiles, a listing of their students' scores on the SRI Reading Comprehension Test and a table identifying teaching processes that appear to be effective for specific levels of students. SRI stressed that if teachers had a wide range of student abilities in their classes they had to consider the recommended behaviors in terms of ability groups within the class rather than the class as a whole.

Preparation of Teacher Profiles

The content of Workshop I focused on the teacher profiles. After fall observations had been completed and the data processed, individual teacher profiles were prepared based on the three days of observation in each classroom. Phase I of the study had identified teaching processes that appeared to be related to students' achievement in reading. The observation variables that reflected these teaching processes were those selected for the teachers' profiles. A mean score for all teachers combined was computed for each variable.* (See Appendix C for the complete list of snapshot and FMI variables.)

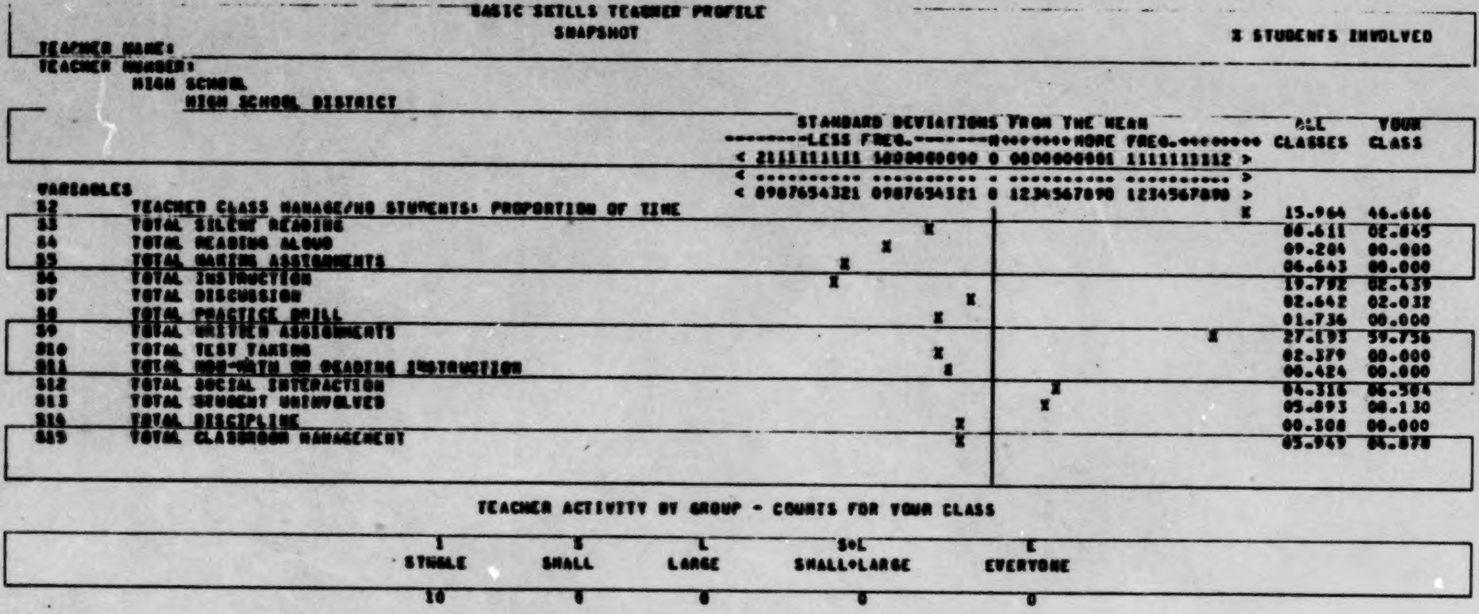
Each teacher had selected one class for study and was observed for three days during each observation period. The frequency of occurrence of each variable was averaged for the three days. This averaged frequency was reported as the teacher's score for each variable. A score for each observation variable was then converted to a z score. A computer printout listed the teachers' z score on each of the selected variables. Each teacher could then visually identify where his/her score on each variable was in relation to the mean of all teachers in the study. (See Figures 3 and 4. The line down the middle is the mean for all teachers.) The first column on the right is the mean of all teachers. The second column is the individual teacher's score.

---

*When discussed in text, variables are identified by number, e.g., S1 = snapshot variable 1, F1 = FMI variable 1.

The snapshot variables in Figure 3 were computed in terms of percentage of time anyone was involved in those activities during the period. The FMI data are shown in Figure 4 in terms of frequency of occurrence over the three days. During a class period an average of approximately 300 interactions would be recorded by the observer. Therefore, the teacher in Figure 4 was observed to have 164 interactions regarding reading during the 45-minute period (see F5).

The findings of Phase I had identified effective teaching processes based on the reading level of the students. The teachers' profiles were then interpreted according to the reading level of each student in the class. Figure 5 shows the form developed to assist in the interpretation of the profiles. All selected variables are listed on the left side; the next three columns represent the students' reading level. The levels used were low, medium and high. The symbols in each of these three columns identify whether that particular process should occur less than (-), equal to (0), or greater than (+) the overall mean of all teachers. To accompany this table, teachers were given a listing of their students' individual test scores on the SRI Reading Comprehension Test. Therefore, with these three documents (individual profiles, a listing of the effective level of use for the teaching processes, and students' test scores) teachers in the treatment group were given specific recommendations of what to do when working with students with different reading abilities.

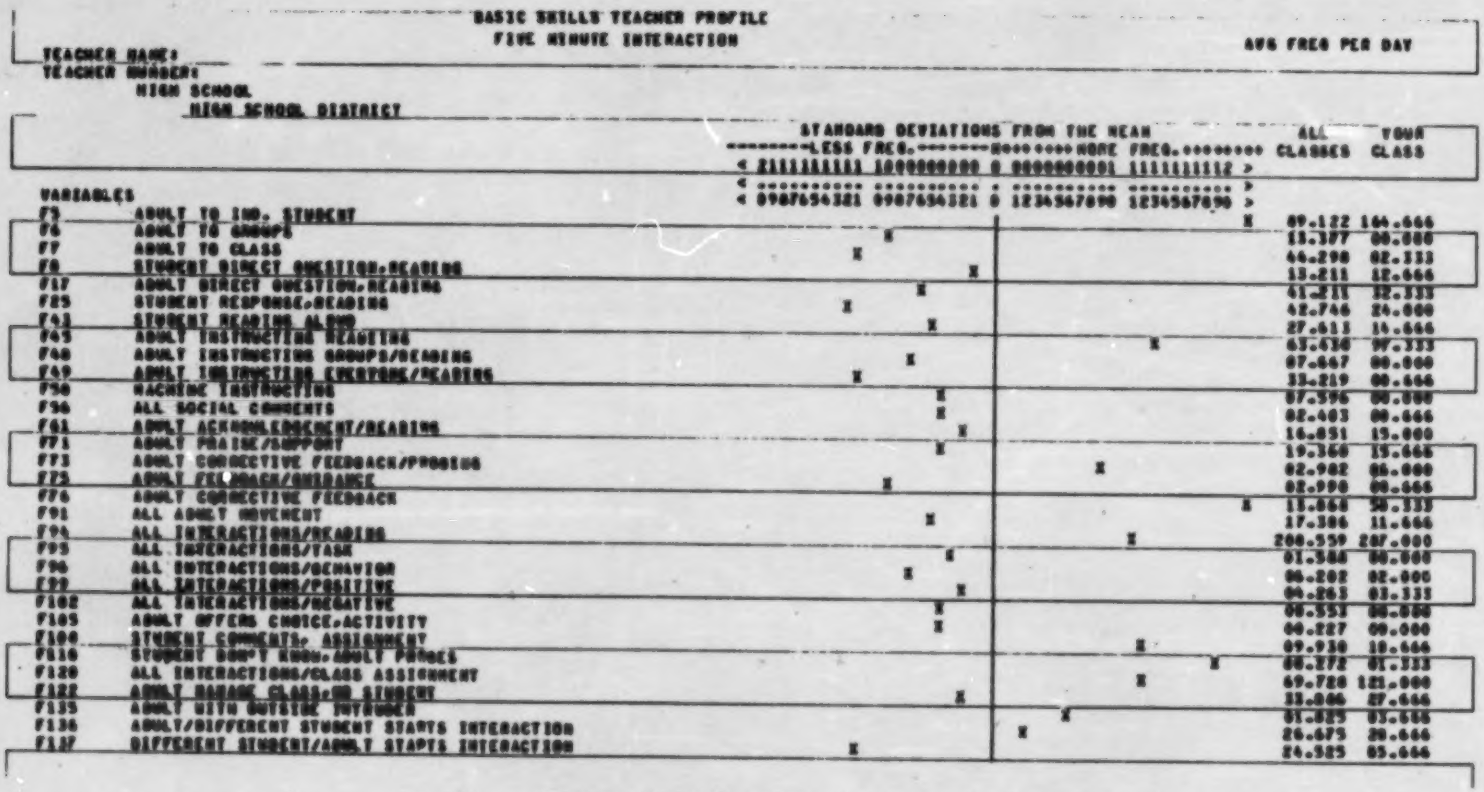


```
                                        BASIC SKILLS TEACHER PROFILE
                                                  SNAPSHOT                                                 % STUDENTS INVOLVED
TEACHER NAME:
TEACHER NUMBER:
          HIGH SCHOOL
               HIGH SCHOOL DISTRICT
                                                                      STANDARD DEVIATIONS FROM THE MEAN             ALL     YOUR
                                                              --------LESS FREQ.--------0********MORE FREQ.********* CLASSES  CLASS
                                                               < 2111111111 1000000000 0 0000000001 1111111112 >
                                                               < .......... .......... . .......... .......... >
VARIABLES                                                      < 0987654321 0987654321 0 1234567890 1234567890 >
S2        TEACHER CLASS MANAGE/NO STUDENTS: PROPORTION OF TIME                                                  X   15.964  46.666
S3        TOTAL SILENT READING                                                    X                                 00.611  02.045
S4        TOTAL READING ALOUD                                                 X                                     09.204  00.000
S5        TOTAL MAKING ASSIGNMENTS                                        X                                         06.643  00.000
S6        TOTAL INSTRUCTION                                              X                                          19.792  02.439
S7        TOTAL DISCUSSION                                                            X                             02.642  02.032
S8        TOTAL PRACTICE DRILL                                                     X                                01.736  00.000
S9        TOTAL WRITTEN ASSIGNMENTS                                                                          X      27.193  59.756
S10       TOTAL TEST TAKING                                                        X                                02.379  00.000
S11       TOTAL NON-MATH OR READING INSTRUCTION                                     X                               00.424  00.000
S12       TOTAL SOCIAL INTERACTION                                                              X                   04.316  06.504
S13       TOTAL STUDENT UNINVOLVED                                                             X                    05.093  00.130
S14       TOTAL DISCIPLINE                                                           X                              00.308  00.000
S15       TOTAL CLASSROOM MANAGEMENT                                                 X                              05.969  04.878

                                        TEACHER ACTIVITY BY GROUP - COUNTS FOR YOUR CLASS

                                  I            S            L            S+L              E
                               SINGLE        SMALL        LARGE      SMALL+LARGE       EVERYONE
                                 10            0            0             0                0
```

FIGURE 3 BASIC SKILLS TEACHER PROFILE–SNAPSHOT



```
                                                    BASIC SKILLS TEACHER PROFILE
                                                     FIVE MINUTE INTERACTION                                      AVG FREQ PER DAY
     TEACHER NAME:
     TEACHER NUMBER:
              HIGH SCHOOL
                  HIGH SCHOOL DISTRICT
                                                          STANDARD DEVIATIONS FROM THE MEAN           ALL      YOUR
                                                    --------LESS FREQ.--------*********MORE FREQ.********* CLASSES  CLASS
                                                    < 2111111111 1000000000 0 0000000001 1111111112 >
VARIABLES                                           < ---------- ---------- - ---------- ---------- >
                                                    < 0987654321 0987654321 0 1234567890 1234567890 >
F3      ADULT TO IND. STUDENT                                                                         X   09.122 164.666
F6      ADULT TO GROUPS                                            X                                     11.377  00.000
F7      ADULT TO CLASS                                          X                                        44.298  02.333
F8      STUDENT DIRECT QUESTION,READING                                    X                             13.211  12.666
F17     ADULT DIRECT QUESTION,READING                                 X                                  41.211  32.333
F25     STUDENT RESPONSE,READING                               X                                         42.746  24.000
F43     STUDENT READING ALOUD                                          X                                 27.613  14.666
F45     ADULT INSTRUCTING READING                                                            X           63.630  97.333
F48     ADULT INSTRUCTING GROUPS/READING                             X                                   07.667  00.000
F49     ADULT INSTRUCTING EVERYONE/READING                      X                                        33.219  00.666
F50     MACHINE INSTRUCTING                                             X                                07.596  00.000
F56     ALL SOCIAL COMMENTS                                             X                                02.403  00.666
F61     ADULT ACKNOWLEDGEMENT/READING                                     X                              16.051  15.000
F71     ADULT PRAISE/SUPPORT                                            X                                19.360  15.666
F73     ADULT CORRECTIVE FEEDBACK/PROBING                                                  X             02.902  06.000
F75     ADULT FEEDBACK/GUIDANCE                                    X                                     02.990  00.666
F76     ADULT CORRECTIVE FEEDBACK                                                                     X   13.064  50.333
F91     ALL ADULT MOVEMENT                                             X                                 17.306  11.666
F94     ALL INTERACTIONS/READING                                                              X         208.559 287.000
F95     ALL INTERACTIONS/TASK                                            X                               01.380  00.000
F96     ALL INTERACTIONS/BEHAVIOR                                    X                                   06.202  02.000
F99     ALL INTERACTIONS/POSITIVE                                         X                              04.263  03.333
F102    ALL INTERACTIONS/NEGATIVE                                       X                                00.553  00.000
F105    ADULT OFFERS CHOICE,ACTIVITY                                    X                                00.227  00.000
F108    STUDENT COMMENTS, ASSIGNMENT                                                       X             09.930  10.666
F116    STUDENT DON'T KNOW,ADULT PROBES                                                            X     00.272  01.333
F120    ALL INTERACTIONS/CLASS ASSIGNMENT                                                  X             69.728 121.000
F122    ADULT MANAGE CLASS,NO STUDENT                                     X                              33.006  27.666
F135    ADULT WITH OUTSIDE INTRUDER                                                   X                  01.825  03.666
F136    ADULT/DIFFERENT STUDENT STARTS INTERACTION                                X                      26.675  20.666
F137    DIFFERENT STUDENT/ADULT STARTS INTERACTION                     X                                 24.325  05.666
```

FIGURE 4   BASIC SKILLS TEACHER PROFILE–FIVE MINUTE INTERACTION

Teacher Name ______________________________

School ________________________________

+ Should be more than the average
- Should be less than the average
0 Should be same as the average

Recommended Frequencies of Behaviors for Three Achievement Levels

Snapshot Variables		Student Level of Achievement			Fall Recommended Changes	Winter Changes
		Low	Medium	High		
S2	Teacher Without Students in Classroom Management	-	-	-	____	____
S3	Total Activity: Silent Reading	-	-	-	____	____
S4	Total Activity: Reading Aloud	+	+	+	____	____
S5	Total Activity: Making Assignment	-	-	-	____	____
S6	Total Activity: Instruction	+	+	+	____	____
S7	Total Activity: Discussion	+	+	+	____	____
S8	Total Activity: Practice, Drill	+	+	0	____	____
S9	Total Activity: Written Assignments	-	0	0	____	____
S10	Total Activity: Taking Test, Quiz	+	+	+	____	____
S11	Total Activity: Non-Reading Instruction	-	-	-	____	____
S12	Total Activity: Social Interaction	-	-	-	____	____
S13	Total Activity: Student Uninvolved	-	-	-	____	____
S14	Total Activity: Discipline	-	-	-	____	____
S15	Total Activity: Classroom Management	-	-	-	____	____

FIGURE 5 EXAMPLE OF FORM USED TO INTERPRET PROFILES

Recommended Frequencies of Behaviors for Three Achievement Levels

Five-Minute Interaction Variables		Student Level of Achievement			Fall Recommended Changes	Winter Changes
		Low	Medium	High		
F5	Teacher to Individual	-	-	-	___	___
F6	Teacher to Group	+	+	0	___	___
F7	Teacher to Class	+	+	+	___	___
F8	Student Questions	0	0	+	___	___
F17	Teacher Questions	+	+	0	___	___
F25	Student Response	+	+	0	___	___
F43	Student Reading Aloud	+	+	+	___	___
F45	Teacher Instruct	+	+	+	___	___
F48	Teacher Instructing Groups/ Reading	+	+	0	___	___
F49	Teacher Instructing Everyone/ Reading	0	+	+	___	___
F50	Machine Instruct	-	+	+	___	___
F56	All Social Comments	-	-	-	___	___
F61	Teacher Acknowledgement/ Reading	+	+	+	___	___
F71	Teacher Praise/Support	+	+	+	___	___
F73	Teacher gives Corrective Feedback by Probing	+	+	0	___	___
F75	Teacher Guidance	+	+	0	___	___
F76	Teacher Corrections	+	+	0	___	___
F91	All Adult Movement	+	+	0	___	___
F94	All Reading Interactions	+	+	+	___	___
F95	All Other Task Interactions	-	-	+	___	___
F96	All Classroom Interaction Behavior	-	-	-	___	___
F99	Positive Affect	0	0	0	___	___
F102	Negative Affect	-	-	-	___	___
F105	Adult Offers Choice	-	-	-	___	___
F108	Student Comments about Task	-	-	-	___	___
F110	Student Don't Know/ Teacher Probe	+	+	0	___	___
F120	Talk about Class Assignments	-	-	0	___	___
F122	Teacher Management Tasks	-	-	0	___	___
F135	Outside Intruder	-	-	-	___	___
F136	Teacher Begins Interaction	+	+	+	___	___
F137	Student Begins Interaction	-	-	0	___	___

FIGURE 5 EXAMPLE OF FORM USED TO INTERPRET PROFILES (concluded)

Interpretation of Teacher Profiles

SRI staff interpreted each teacher's profile individually to be certain the teacher understood the format of the profiles and the manner in which they were to be interpreted.

We did not suggest that a teacher function at the mean of all teachers since the correlational data suggest that classrooms scoring higher (or lower in some cases) than the mean on these variables had students who gained significantly more than did students in other classrooms. We recommended that teachers increase or decrease the behavior so that it occurred at least 1/2 a standard deviation above or below the mean dependent upon whether the relationship with gain was positive or negative. For example, statements about behavior (F96) are negatively related to reading gain. This variable occurred on the average of 9.41 times over all classrooms, thus we would recommend that this occur fewer than nine times per class period. In this case we encouraged teachers to reduce interactions regarding behavior to zero since all such interactions limit interactions related to reading. For each variable we would recommend that teachers do it more, or less, or say it was all right as it was. This provided teachers with a few specific recommendations.

Based on the profile that is shown in Figure 3, the following recommendations were made to that teacher, who had a homogeneous group of low achieving students:

Try to increase

- Reading aloud activities.
- Instruction to groups or entire class.
- Diagnostic testing and brief quizzes.
- Asking students direct questions regarding reading; subsequently, increase in students' responses.
- Praise and support to students regarding reading.
- Positive affect.

Try to decrease

- Individual written assignments.
- Interactions with individual students.
- Negative interactions - this includes threats of punishment for misconduct.
- Total silent reading.
- Interruptions initiated by students; let students know that interruptions are distracting.
- Interactions regarding class assignments.

Workshop II

Because so many behavior variables studied in Phase I were negatively correlated with reading achievement, the second workshop provided specific recommendations for behavior management. Each teacher received a packet to read before the session. During the session, the leader asked the teachers what was the most difficult behavior problem they had to handle the past week. In each of the separate sessions, the teachers eventually mentioned the same problems: tardiness, absenteeism, arguments, shouting out demeaning remarks and physical fights. The leaders asked how each teacher handled such situations. Some of these incidents were role played. Ways of handling such situations were suggested by the teachers and the trainers and teachers then formulated recommendations based upon the suggestions. Teachers were encouraged to try some of the methods during the following week. They were given a packet to read in preparation for the next workshop.

Workshop III

The third workshop was opened by asking who had tried some of the behavior management methods. There was a good discussion about what methods work in various situations. The workshop then focused upon specific suggestions for how to organize or structure the classroom. Since the students in many classrooms had a wide range of reading abilities, we recommended grouping according to reading disability for some of the reading activities. This recommendation was difficult for teachers to execute since little information was available to them regarding the students' particular reading problems. We suggested that teachers try to understand why each secondary student had failed to achieve in reading. Did they have sight, hearing, attending, phonic, or sequencing problems? Armed with little more information than the CTBS provides regarding grade equivalency and decoding skills, many teachers felt unable to follow this suggestion. Some felt our recommendations for grouping were difficult to facilitate in classrooms where the number of students was large and the classrooms were small. Further recommendations for arranging the desks or tables for groups and placing assignments on the chalkboard before class begins were impossible for those teachers who moved from classroom to classroom. If a teacher must race the children to the room, there is little time to move the furniture or write assignments on the chalkboard.

Techniques for motivating students toward good behavior and achievement were also discussed in the third session. The teachers found these recommendations easier to implement since they did not involve the rearrangement of students and furniture.

Workshop IV

The fourth workshop synthesized the activities of the first three. It dealt with the direct approach to teaching. This method requires that teachers be in charge of their classrooms at all times, that they group students according to ability, select appropriate sequential materials, and provide frequent, supportive feedback. Appropriate materials for secondary students were discussed and some teachers shared diagnostic tests they use with their reading students.

Workshop V

Observations were conducted again in January 1978 to see whether recommendations from the workshops were being followed. New profiles were prepared for each teacher in the form of transparencies, so that the winter profile could be laid over the fall profile to examine change in teacher behavior. Workshops based on these data were conducted in February, and recommendations for continued behavior change were made.

Followup Workshops

The teachers were eager to try the recommendations in the spring semester. They requested another meeting where they could meet the teachers from other districts. We thought this information exchange could be useful; and an April meeting was organized. At this meeting teachers came prepared to share high interest reading materials and diagnostic tests.

Control teachers were given two workshops. These were abbreviated and we felt the interactions were not as rewarding as were the longer series of workshops. In the future we would want to allow enough time for all teachers to have the complete series of workshops.

Teacher Reports

Some surprising findings came from the teachers during the workshops. They provided many anecdotal situations describing the problems they confront as reading teachers. Based upon their suggestions, we prepared a survey of teacher training, teaching experience, room assignments, class size, and student ratio. We found that only 21% of the secondary teachers who had been assigned to teaching basic reading classes had a specialty in teaching reading; 34% had no formal training to teach reading (see Table 4). Most teachers held more than one credential and were trained to teach music, arts, speech, psychology, physical education, typing, English, literature, drama, Spanish, theology, science, and career education (see Table 5). Of the 47 teachers responding to the survey, 34 continued to teach classes other than reading. Teaching experience varied from 1 year to 31 years. 1977-78 was the first year of teaching reading for 11 teachers while 7 have been teaching reading for 10 or more years. All the teachers in our sample assigned to teach reading were very willing but they felt inadequately prepared. Many

Table 4

SUMMARY OF TEACHERS' TRAINING AND EXPERIENCE
(n = 47 teachers)

Type of Training	Percent of Teachers
Have a specialty in teaching reading	21.3%
Attend workshops	53.2
Take college courses	48.9
Have an elementary credential	19.1
Have no formal training to teach reading	34.0
Also teach other subjects	72.3

Experience	Range
Total years teaching	1-31 years
Years teaching reading	1-12 years

sought additional training. Workshops for teaching reading had been attended by 53%, and 49% had taken some college courses. Teachers reported that the reading workshops and courses they had taken varied in usefulness from excellent to a waste of time. There is a wide variety of programs being offered for inservice workshops, but few guidelines are available for districts or teachers to know what is needed to help teachers learn to teach reading at the secondary level.

A fundamental problem seems to be the absence of any program for diagnosing learning problems at the secondary level. Most elementary school children are screened for sight or hearing problems, or dyslexia, and special programs are arranged for the children. If junior and

Table 5

CREDENTIALS FOR TEACHING BY SUBJECT AREA

Credentialed Subject	No. of Teachers
Reading	10
Literature	5
Writing	3
Grammar	2
Language Arts	4
Speech	3
English	24
Spanish	2
Theology	1
Music	3
Drama	4
Art	3
Career education	1
Commerce	1
Business	1
Physical education	4
Aviation	1
Ethnic studies	1
Social studies	16
History	12
Political science	1
Psychology	2
Life science	2
Biological and physical sciences	2
Math	1
State requirements	1

senior high school students are still performing at a second, third, or fourth grade reading level, then some excellent information should be available that describes each student's difficulties in hearing, sight, or perception, as well as specific deficits in reading skills. However, secondary students are rarely tested. Limited school budgets have cut the time available for school psychologists or counselors to provide such services.

Most teachers reported that the only student information they received was the CTBS grade equivalence. Teachers rarely received any other diagnostic information, nor were they trained to administer diagnostic tests. Thus, students who have failed previously when using standard curricula often continue to fail using the same curricula. Diagnostic and prescriptive skills are badly needed by teachers.

Another problem teachers reported is that many schools are organized so that teachers do not have their own rooms. Of the reading teachers, 49% shared rooms, and 28% moved from room to room (see Table 6). Several teachers reported being in six different rooms during the day. This makes it very difficult to establish a reading environment where students can see their progress charted or where teachers can have appropriate reading or testing materials close at hand. In this situation, the teacher must place all materials on a cart and move from class to class. One teacher had to go down two flights of stairs with the cart.

Although class size was not found to be directly correlated with reading gain, it does affect the teacher's ability to work with different groups of students while maintaining order. A classroom with two teachers who have ten or fewer low-reading-level students is more likely to meet the student/staff ratio, but of the 47 teachers responding to the survey, 20 did not have classroom aides. The ratio of students to adults ranged from 5:1 to 33:1.

Table 6

CLASSROOM ENVIRONMENT
(n = 47 teachers)

Description	Percent of Teachers
Have adequate room size	85.1%
Have no assigned room	28.0
Share a room	48.9
Have an aide present	57.4

	Average	Range
Class size	20	7 - 33
Ratio of students to adults	17:1	5:1 - 33:1

Summary

For all workshop sessions, the SRI trainers made an effort to create an atmosphere that fostered uninhibited participation by the teachers. The teachers expressed appreciation for the opportunity to discuss their problems freely and to receive specific suggestions for methods to improve their effectiveness in the classroom. The teachers liked receiving practical recommendations that could be tried the next day in the classroom. They also liked the small group interactive nature of the sessions--where they could discuss what ideas worked and made their classroom life easier and illuminate what ideas didn't work so well in their classroom setting.

The workshops were well attended; the average attendance was 88%. Of the eight absences that occurred, two people accounted for half of them. One teacher was a team teacher who was reassigned during the semester. The other teacher had many personal problems that prohibited her from coming. These two teachers later dropped from the study.

VII EFFECT OF PHASE II WORKSHOPS ON TEACHER BEHAVIOR

Once the workshops were delivered and the pretest and posttest data were collected the $100,000 question was: Did the workshops make a difference in how the teachers performed in their classrooms?

Mean frequencies for each variable used on the profiles were computed for the control and treatment groups. A report of how each group performed on critical variables is displayed on Tables 7, 8, 9 and 10. Each group is compared with a grand mean. The grand mean was derived from 46 classrooms observed in spring in Phase I and 43* classrooms in spring, Phase II. (See Appendix E.) This mean reflects the frequency or percentage of the behaviors occurring in classrooms that were correlated with student gain. Our recommendation to teachers was to increase or decrease a particular behavior so that it was above or below the mean depending on whether the variable was positively or negatively correlated with gain. In some cases the teachers were already performing the activity in an effective manner so the recommendation was to continue the activity as they were doing. If the treatment or control group of teachers was performing above or below the mean as recommended on a variable, they were given one point. (This is shown on Tables 7, 8, 9 and 10 in terms of a plus.) In this manner an implementation score was developed for each group. Five Minute Interaction variables (F) are reported in terms of frequency of occurrence during 300 interactions recorded per class period. Snapshot variables (S) are reported in terms of percentage of time observed during 5 snapshots per class period. This is a descriptive analysis wherein trends and meaningful differences are examined, rather than a statistical analysis.

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*Two classrooms did not have a complete data set and were dropped from the analysis.

Interactive Instruction

As previously stated, we encouraged teachers to decrease time taken to make assignments and to increase instruction time. This instruction time variable is a composite that includes instruction using any materials as well as discussions and drill and practice activities. This total instruction time (S6, 7, and 8) was observed to have increased slightly for the treatment group from 13% to 15%. The control group went from 11% in the fall to 8% in the spring. The instruction interactions (F45) increased appreciably for the treatment group while declining for the control group. The treatment group scored a point on both of these variables (see Table 7).

An instructional method includes the presentation of new material and what the teacher does after giving instruction or presenting the new material. This procedure varies. We encouraged asking short direct questions and giving immediate supportive feedback to the student's response. Students who have a long history of failure need consistent support and many opportunities to experience success. The number of questions treatment teachers ask about reading (F17) decreased slightly from fall to spring, but the students' response rate (F25) increased toward spring. Out of an average of 31 questions teachers asked per period in the spring, students responded an average of 29 times. We encouraged the teachers to distribute the questions among the students, choosing questions each student could most likely answer. We discouraged calling on volunteers since the same students are likely to always respond and get the feedback. Data from Table 7 (F136) indicates that teachers in the treatment group called on different students 23 times in the spring (a little less than in the fall). However, out of the 31 questions asked, a different student was asked 23 times. Note that all of these variables are above the grand mean in the treatment group.

When a teacher continues to question one student, it may indicate the student gave an incorrect response and the teacher was asking probing questions (F110). This is a supportive kind of feedback that is low in frequency but was related to student gain in Phase I. It increased

Table 7

INTERACTIVE INSTRUCTION

				Treatment Teachers (N = 25)							Control Teachers (N = 19)						
		Grand Mean	More or Less*	Treatment Group Implementation Score*	Fall $\bar{X}$	Fall SD	Winter $\bar{X}$	Winter SD	Spring $\bar{X}$	Spring SD	Control Group Implementation Score	Fall $\bar{X}$	Fall SD	Winter $\bar{X}$	Winter SD	Spring $\bar{X}$	Spring SD
S6, 7,8	Instruction Activities	12.0%	more	+	13.0%		15.0%		15.0		0	11.0%		9.0%		8.0%	
F45	Instruction Interactions	50.1	more	+	66.3		44.3		58.3		0	53.6		50.0		44.4	
F17	Teacher Questions: reading	30.3	more	+	37.2		33.0		31.7		0	40.2		33.9		25.8	
F25	Student Response: reading	28.0	more	+	33.3		29.0		29.1		0	34.8		29.2		25.3	
F71	Praise/Support reading or task	12.8	more	+	12.6		13.8		15.2		0	13.4		12.4		11.6	
F76	Corrective Feedback: reading	12.3	more	+	10.4		10.8		13.0		0	16.6		12.1		12.4	
F110	Probing Questions	2.0	more	+	1.3		2.2		3.0		0	2.8		1.5		2.0	
F136	Teacher Interacts: different student	22.0	more	+	26.0		20.9		23.1		0	25.8		21.0		21.9	
S10	Tests or Quizzes	1.5%	more	0	.2%		1.8%		1.4%		+	.4%		.8%		1.7%	
F43	Students Reading Aloud	17.1	more	0	10.7		13.8		13.8		0	14.4		13.7		16.1	
S4	Reading Aloud Activity	5.7%	more	0	3.9%		1.9%		2.3%		0	3.4%		5.1%		5.7%	
F94	All Interactions: reading	192.2	more	+	218.7		208.0		199.0		0	224.1		209.0		181.7	

S = Snapshot variables on percentage of time observed.

F = Five minute interaction variables - frequency out of 300 interactions.

*more = treatment teachers were directed to do more of these activities than the grand mean.
less = treatment teachers were directed to do less of these activities than the grand mean.

slightly in the treatment group. The message from the teacher to the student in this variable is: The answer isn't right but I think you (the student) can get it, if I (the teacher) ask the question differently. The main idea is to assist students to respond correctly so that positive supportive praise or acknowledgment can be given. There was a positive correlation between praise and support with achievement gain and attendance rate in Phase I. The treatment teachers did increase the frequency of offering praise and acknowledgement (F71) and corrective feedback (F76, F110), while the control teachers declined on these variables.

In order to give students a daily opportunity to succeed we suggested giving short quizzes (5-10 items) that could be scored easily. The quizzes should be designed to allow the students to succeed at a rate of 80-100%. Students who have seldom received 100% need chances to succeed on this level. Success becomes a motivating factor for students who have stopped trying. Although there was a slight increase in the number of quizzes (S10) being given in both the treatment and control groups from fall to spring, the number of quizzes observed were very few. The grand mean was only 1.5%.

In addition to the instruction of how to teach new material through drill and practice and positive support, we suggested that the teachers have the students in the low reading groups read aloud. Hearing as well as seeing the words is helpful to these students. Many teachers were reluctant to try this since they felt the students would be embarrassed. One teacher who had been teaching 29 years tried grouping and having students read aloud. He reported that he and the students enjoyed the process--"it seemed to break the monotony." Table 7 indicates that although the treatment did increase the number of reading aloud (F43) interactions, they were still lower than the grand mean. The percent of time (S4) went down slightly. This was a disappointment but we conclude it is difficult to get teachers to try something they have opinions against and haven't experienced previously.

The reading interactions comprise two-thirds of the 300 interactions recorded for the treatment groups (F94). We would have preferred to see this increase rather than decrease, but it is still higher for treatment teachers than the grand means. One explanation for the lower number of reading interactions in the treatment groups may be that the number of interactions centering on other subject areas--current events, social studies, science--increased in the spring. These interactions are coded as task oriented when subject matter other than reading is discussed.

On nine of the twelve interactive instruction variables the treatment group is above the grand mean and the control group. Although the reading aloud variable was not increased to the degree we might hope, we conclude this part of the treatment was effective.

Non-Interactive Instruction

In Phase I, the data suggested that more gain was achieved in classrooms where there was more interactive instruction and where several activities occurred during one period. The no-gain classrooms in Phase I tended to have a high rate of written assignments and silent reading and not much interaction with the students. Thus we recommended a reasonable balance between these activities: encouraging more reading aloud, more discussion and reviewing, less silent reading, and fewer written assignments. The snapshot variables on Table 8 indicate that both groups were near the grand mean on silent reading (S3) in the spring. Time spent on written assignments (S9) decreased for the treatment group and stayed about the same for the control group.

In classrooms where there were high rates of silent reading and written assignmets we found there were also high rates of teachers doing tasks like grading papers or making lesson plans during class. To change this pattern we encouraged teachers (especially those with students in the low or medium groups) to stay involved with the students and cautioned them not to grade papers, prepare lessons, etc. during class. Results indicate that on variables describing situations where teachers are not involved with students (S2 and F122), the treatment teachers increased but were below the grand mean. The control teachers increased this behavior to considerably above the mean. By springtime, control

Table 8

NON-INTERACTIVE INSTRUCTION

			Treatment Teachers (N = 24)							Control Teachers (N = 19)						
	Spring Grand Mean	More or Less*	Treatment Group Implementation Score	Fall		Winter		Spring		Control Group Implementation Score	Fall		Winter		Spring	
				$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
S3 Silent Reading	14%	less	0	15%		13%		16%		0	11%		12%		15%	
S9 Written Assignments	21%	less	+	24%		24%		18%		0	24%		26%		23%	
F122 Teacher without Students	41	less	+	17		25		36		0	24		36		47	
S2 Teacher: manager--no students	25%	less	+	21%		24%		22%		0	21%		26%		29%	
		Total +	3						Total +	0						

S = Snapshot variables on percentage of time observed.

F = Five minute interaction variables - frequency out of 300 interactions.

*more = treatment teachers were directed to do more of these activities than the grand mean.
less = treatment teachers were directed to do less of these activities than the grand mean.

teachers were not involved with students 29% of the time when the snapshots were recorded. The treatment group was lower than the grand mean and the control group on three of the four non-interactive instruction variables.

Off-Task Activities

In other research on teaching (Evertson, Anderson and Brophy, 1978; Stallings and Kaskowitz, 1974; and Good, 1978), the variable most often found to be related to achievement gain is the time students spend on task. In secondary classrooms where the reading period is likely to be only 45 minutes, it is of utmost importance to reduce the off-task behavior and increase the on-task behavior. The most striking difference we found in Phase I between the no-gain classrooms and the gain classrooms was in the amount of time teachers spent talking about behavior, the number of social comments, and students or teachers not involved in the process of reading. Thus, in the workshops we focused a considerable effort on techniques for reducing off-task behavior and increasing task behavior. Table 9 suggests the workshops had an effect. In Variable F56, Social comments, the treatment group dropped in the winter and increased slightly in the spring, but overall was lower than the grand mean. The control group started slightly lower in the fall and increased in winter and increased dramatically in the spring. Given teenagers and springtime, the increase is not surprising, but the treatment group teachers were able to hold the socializing down.

The treatment teachers' comments on students' behaviors (F96) were reduced by nearly one-third. In the fall the treatment teachers made an average of 9.6 statements about behavior out of 300 statements during the class period and by the spring this had dropped to 5.9. The control teachers started at 6.7 and increased slightly to 7.5.

Students' non-involvement in tasks (S-12, S-13) increased in the treatment group, but was below the grand mean. The control group increased to nearly 14% in the spring snapshot. This means that when

Table 9

OFF-TASK ACTIVITIES

	Spring Grand Mean	More or Less*	Treatment Teachers (N = 24)							Control Teachers (N = 19)						
			Treatment Group Implementation Score	Fall		Winter		Spring		Control Group Implementation Score	Fall		Winter		Spring	
				$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
F56 Social Comments	6.7	less	+	2.2		1.9		2.9		0	1.5		2.6		8.1	
F96 Interactions: behavior	6.7	less	+	9.6		5.7		5.9		0	6.7		7.6		7.5	
S12, 13 Students Uninvolved in Tasks	11.4%	less	+	4.5%		5.3%		9.1%		0	5.1%		4.7%		13.9%	
F135 Class Intrusions	2.7	less	+	2.7		3.1		2.1		0	2.6		2.4		3.3	
		Total +	4						Total +	0						

S = Snapshot variables on percentage of time observed.

F = Five minute interaction variables - frequency out of 300 interactions.

*more = treatment teachers were directed to do more of these activities than the grand mean.
less = treatment teachers were directed to do less of these activities than the grand mean.

the spring observations were made some student or students were either chatting or not involved in any activity (i.e., staring out of the window) 14% of the time.

Other events that take teachers and students off task are intrusions from outside the class. There are many reasons why people enter the classroom and stop the activities: collecting absence data, taking students from class for meetings, school announcements, class photos, purchasing tickets, etc. Phase I data revealed a negative relationship between outside intruders and student gain. Limiting the number of intrusions into the teachers' instructional time is a school level issue which teachers cannot control. While we made teachers aware of the finding regarding intrusions, there was little they could do about it. However, the rate of intrusions in treatment classes diminished slightly in the spring (F135).

The treatment group was below the grand mean on all of the off-task variables.

Organization and Grouping

The time spent in organizing and managing the classroom is time spent off the task of teaching reading. However, it is of utmost importance that the classroom is well organized; otherwise it will not function smoothly.

In our Phase I study, we found that in all three gains groups the teacher spent less time making assignments and more time instructing the students than did the teachers of no-gain classes. Thus, we encouraged the treatment teachers in Phase II to be efficient when making assignments: e.g., write assignments on the chalkboard before the class arrives, or have the class assignments for the week on a ditto sheet in student folders. By all means let the students know what to do when they finish an assignment. The message was, have a known agenda from the moment a students walks in the room until the period ends.

The observation data indicate that the percentage of time spent making assignments (S5) went down slightly for the treatment group and stayed the same for the control group (see Table 10). The number of interactions about assignments and organization (F120) increased somewhat for the treatment group but remained below the grand mean. The control group increased by 20 interactions from fall to spring. The number of student comments about assignments (F108) decreased for the treatment group and increased for the control group.

Data shown in Table 10 indicate that a high percentage of observed time was spent by teacher and students in management activities, i.e., passing books, collecting papers, grading papers (S2 and S15). These activities decreased for the treatment group and increased for the control group in the spring.

How the teacher organizes the classroom to keep students on task will make a difference in how well the on-task objective is accomplished. Research findings in Phase I indicate that teachers who move around the classroom monitoring students' work had more students gain than did teachers who allowed students to move around the room coming to the teacher for help. We encouraged our teachers to do the moving around. The treatment teachers held this behavior constant and were above the grand mean (F91) while the control teachers decreased this behavior by 50%.

Many of the classrooms had children with different reading abilities, so we encouraged the teachers to group the students by ability. Given the findings mentioned in Section I that working with one student at a time is an inefficient way to distribute the teacher's time, we recommended that teachers cut down the amount of time spent with one student and increase the time they spent working with a group. Students learn from each other in groups because the instruction time with the teacher is increased. Rather than 2 minutes of individual time they may have 12 minutes of group time with the teacher.

Table 10

ORGANIZATION AND GROUPING

	Spring Grand Mean	More or Less	Treatment Teachers (N = 24)							Control Teachers (N = 19)						
			Treatment Group Implementation Score	Fall		Winter		Spring		Control Group Implementation Score	Fall		Winter		Spring	
				$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
S5 Making Assignments	5%	less	+	5%		5%		3%		0	5%		4%		5%	
F120 Interactions: assignments and organization	66.7	less	+	50.7		55.0		58.1		0	57.7		78.9		78.5	
F108 Student Comments: assignments	6.3	less	+	7.2		6.3		4.7		0	6.0		9.7		8.5	
S2, 15 Total Class Management	30%	less	+	26%		26%		24%		0	24%		31%		31%	
F91 Teacher Movement	16.7	more	+	20.1		22.7		19.6		0	25.9		15.1		12.5	
F48 Teacher Instructs Group	4.9	more	+	5.0		7.3		7.2		0	1.7		4.8		2.4	
F5 Teacher Individual Student	73.6	less	+	91.4		82.6		70.8		0	89.0		77.0		73.3	
S119 Teacher with Individual	25%	less	0	23%		-		26%		+	24%		-		23%	
S120 Teacher with Group	16%	more	+	13%		-		17%		0	20%		-		16%	
S121 Teacher with Total Class	24%	more	+	30%		-		26%		0	26%		-		22%	
F105 Offer Student Choices	.15	less	0	.17		.05		.16		+	.05		.12		.14	
		Total +	9						Total +	2						

S = Snapshot variables on percentage of time observed.
F = Five minute interaction variables - frequency out of 300 interactions.
*more = treatment teachers were directed to do more of these activities than the grand mean.
less = treatment teachers were directed to do less of these activities than the grand mean.

The data on Table 10 indicate that speaking to groups (F48) increased slightly and working with individuals (F5) decreased in the treatment group: there were an average of 20 fewer interactions per period with individuals in the spring than in the fall. There still were many more interactions with one person than there were with groups. Teachers working with groups (S120) increased from fall to spring in the treatment group. When working with a group teachers are most likely to ask one student at a time to answer a question so that interactions with individuals will be recorded even if the individual is within a small group. This may help explain the much higher rate of speaking to individuals (S119) rather than to groups.

Data for spring in the treatment group shows that 4% more time was spent with groups (S120). Less time was spent with the total class (S121) but it still was above the grand mean. Counter to our suggestion, slightly more time was spent with individual students (S119). The amount of time control teachers spent with one student remained approximately the same throughout the year. The control group started in the fall by spending 7% more time with groups (S120) than did the treatment group, and this decreased somewhat in the spring. Learning to work with groups is a difficult organizational challenge for most high school teachers. Secondary teachers have not been trained to orchestrate and plan for several groups to function at the same time. Those teachers who formerly had been elementary teachers found this recommendation easier to carry out than did teachers trained only to teach in secondary classrooms. More teachers in the control group had been trained as elementary teachers, explaining in part their higher fall scores for grouping.

To encourage teachers to be in strict control of their classrooms, we suggested that they keep the number of choices students make at a minimum. Much time can be wasted while students decide whether they want to do this or that. We found students were rarely allowed to make choices in either group--fall or spring (F105). The grand mean was only .15. Thus, we think this variable has little impact on student gain and is a small part of a larger picture.

The treatment group was above the grand mean on all the organization and grouping variables except "offers students choices," which is so low in frequency that we consider it of little consequence.

Teacher Self Ratings

The teachers rated themselves on a scale of structure and flexibility in the fall before training and again in the spring after training. Table 11 shows the change for both groups. Clearly the treatment group's change is toward structure while the control group is virtually unchanged. An analysis of variance indicated a statistical difference between the two groups. Given that much of the training was focused upon getting students on task and staying there, this change in attitude is not surprising.

Table 11

TEACHERS' RESPONSES TO STRUCTURE/FLEXIBILITY SCALE

	Treatment		Control	
	x	SD	x	SD
Fall	28.47	6.48	29.25	4.65
Spring	33.00	7.25	-28.81	5.48
Difference	4.53		- .44	
2-Tail probability	p > .001			

Summary

Overall we consider that the treatment teachers were implementing the training program. While the differences between the treatment teachers, the control teachers and the grand mean is not great in some cases, the trend is clear. Out of 31 variables the treatment teachers performed as recommended in relationship to the grant mean on 25 of them.

Two variables of real consequence for student gain describe reading aloud. These variables started at a low frequency and did not increase to the mean. We would like to see reading aloud increase and the teachers working more often with groups of students and less often with individuals. Also less time should be allocated to silent reading. We consider the training for these behaviors should be improved. The other two variables that were not implemented, quizzes and offers students choices, were of very low frequency and of lesser importance to the training program.

VIII STUDENT OUTCOMES

This section presents the findings regarding reading achievement, students' perception of their classroom environments, and absence rate.

Sample

Collecting data in natural classrooms is always precarious--especially in secondary schools. In spite of our efforts to select a large enough sample of classrooms where the teachers and students planned to stay together for the entire year, there were many changes in plans between semesters. In Phase I only 36 of 43 classrooms in the beginning sample had sufficient student pretest and posttest achievement test scores. In Phase II only 29 of 46 classes had sufficient test data. Some classrooms did not complete the expected test program; other classes were discontinued at mid-semester. Other classrooms had too few students with pretest and posttest data. Student ratings are available from 42 classes and absence data from 37 classrooms.

Analysis of Variance of Treatment and Control Group Reading Scores

The first and most important question to ask of the student achievement data is: Did the treatment group's students gain more than the control group's students? To answer this question we used those classrooms that had district reading scores available from spring 1977 and spring 1978. This provided a sample of 15 treatment classrooms and 14 control classrooms.

A procedure that has emerged from the work of Hedges, Gage and Olkin (1978) suggests that rather than computing statistical difference between groups it is reasonable to consider the size of effects of treatment upon a group of students. Several recent reports of experiments report their effects in this manner (Glass and Smith, 1979).

One standard deviation is considered a good effect while 1/2 standard deviation is considered a moderate effect.

An analysis of variance of the two groups provided the data shown on Table 12. The effect size is 1/2 a standard deviation. This can be considered a moderate effect on student scores attributable to the training of the treatment group.

Table 12

MEANS AND STANDARD DEVIATIONS ON CTBS GAIN SCORES

	$\bar{x}$	S.D.
Control (N = 14)	37.90	24.15
Treatment (N = 15)	50.45	31.94

$$\text{Effect Size} = \frac{50.45 - 37.90}{24.15} = .52 \text{ S.D. units}$$

Teacher Characteristics and Classroom Demographics Related to Student Reading Gain

To see whether teacher characteristics or classroom demographic data were related to student gain we computed several partial correlations and analyses of variances. The first variables we considered describe teacher experience and training (see Table 13).

Clearly there is no relationship between the years of teaching or experience in teaching reading and reading gain. However, there is a trend suggested in the training teachers have received to teach reading. Teachers who have reading credentials and teachers who have had some courses in teaching reading have students who achieved more in reading. Teachers who had no courses in learning to teach reading had students who gained less.

The number of students in classes ranged from 7-33. There was a negative correlation (r = -.28) between more students and gain,

Table 13

TEACHER CHARACTERISTICS AND SCHOOL DEMOGRAPHICS RELATED TO READING GAIN

Number in Sample	Variable	Gain			
		$\bar{x}$	SD	r	p
27	Years teacher experience			.14	-
27	Experience teaching reading			-.10	-
27	Training in teaching reading			.88*	-
5	Certified to teach reading	54.12	44.14		
4	Elementary credential	32.41	13.85		
10	Some course in reading	45.33	25.12		
8	No course in reading	-48.46	32.65		
0	Special ed credential	-	-		
27	Number of students (7-33)			-.28	.06
27	Teacher/pupil ratio (6/1-33/1)			-.09	-
	Number of aides (0, 1, 2):			.25*	-
15	0	50.09	32.06		
9	1	42.32	26.78		
3	2	41.69	27.33		
27	Duration of class			.30*	-
	40 minutes	56.39	31.42		
	55 minutes	52.35	28.74		
27	Course subject names			.88*	-
1	Social studies classes	72.57	-		
1	Science classes	79.64	-		
16	Reading classes	45.04	31.67		
10	English classes	40.36	22.64		
27	Permanent classroom			3.93*	.05

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*F Ratio.

suggesting that teachers can provide better instruction for remedial reading classes when there are fewer students. This is supported in an analysis of adult/student ratios. Although there is not a linear correlation between the ratio of teachers and aides to students, we did find on a scattergram that only 20% of the classes with a ratio of 23 or more students to one adult made more than 50 gain points, while 40% of the classes with a ratio of 12 or less students to one adult made more than 50 gain points. The number of aides did not seem to have an effect; in fact, the three classrooms that had two aides made the least gain, while students in the 12 classes where teachers were working alone gained more.

The length of the class period did not have a relationship to reading gain. In fact, the two classes lasting 55 minutes had similar gain as the four lasting only 40 minutes. The least gain was made by five classes lasting 45 minutes. Clearly, how the time is used is more important than the number of minutes available. However, it would be interesting to see how the gain would compare in classes of 55 minutes and those of 45 minutes if the teachers were well organized and in both cases the teachers were involved with the students the total time available.

The subject in which reading was taught was also of interest to us. Those that were classified as reading classes or English classes made approximately the same gain while the social studies class and the science class made the most gain. This is a curious finding since these classes focus upon subject matter as opposed to reading and the teachers may not have had courses in teaching reading.

One of the most interesting findings is that teachers who have permanent rooms--and do not have to move from room to room with reading materials--have students who make more gain. This supports the teacher's recommendations presented at the end of Chapter VI, that reading teachers need their own room where they can create a reading environment and have the necessary materials within reach.

The findings here regarding smaller class size and permanent rooms can be useful in guiding school policy regarding these issues. These had a very low frequency and only occurred in two classes in Fresno: a science class and a social studies class. These correlations were deleted from Table 14 since they are anomalies in the data. Several variables defining a structured type of environment were found to be significantly correlated when the Fresno data were deleted:

F16 Adult commands, requests, and direct question to students, task or reading, $r = .35$ $p > .05$.

F24 Student responses to an adult, task or reading, $r = .33$ $p > .05$.

F71 Adult praise and support, task or reading, $r = .54$ $p > .001$.

These variables are included on Table 14 since they occur with high frequency across the sample.

In Phases I and II partial correlations between a selected set of process variables and student scores were computed holding pretest scores constant. The results of these analyses for the two years are presented on Table 14. Variables describing on-task or instructional events are shown first. Variables describing teachers not involved with students are shown second. A set of variables describing off-task behavior is shown last. (Task in this study refers to the task of reading instructions.)

It is unreasonable to expect that each variable in Phase II will correlate as it did in Phase I. The teachers are different, the students are different, and the locations are different. Thus, we report trends as well as significant findings at $p > .05$. Of the 17 significant correlations in Phase II, nine were also significant in Phase I. These relationships are discussed in the following sections.

Replication Study of Partial Correlations of Instructional Process Variables and Reading Scores

The focus of Phase II was on the training of teachers to use the process variables found to be related to student gain in Phase I.

Table 14

PARTIAL CORRELATION OF READING CTBS SCORES AND PROCESS VARIABLES

		Phase I (N=36)		Phase II (N=29)	
	On-Task/Instruction	r	p	r	p
S7	Discussion/review	.40	.001	.63	.001
S51	Discussion and review: workbooks	.41	.001	.49	.001
S8	Drill and practice	-	-	.38	.01
F43	Student reading aloud	.59	.001	.28	.05
F3	Student initiated questions/comments	-.22	-	.32	.01
F16	Adult commands, requests, and direct question to students, task or reading			.35	.05
F24	Student responses to an adult, task or reading			.33	.05
F71	Praise and support, task or reading			.54	.001
F72	All praise and support	.25	.05	.19	.15*
F114	Student refusal to respond, adult encourages student	-	-	.28	.05
F110	Student says "I don't know," teacher probes	.50	.001	-	-
F113	Student answers wrong; teacher skips to another student	-.25	.05	-	-
F92	Teacher listening to a student	-	-	.42	.01
	Teacher not Involved with Students				
S2	Teacher without students: management tasks	-.24	.05	-.30	.05
F90	Adult not interacting with students	-.23	.05	-.40	.01
S81	Student silent reading: workbook	.30	.25	-.48	.001
S3	Teachers and students silent reading	.20	.25	-.44	.001
S108	Student doing written assignment: workbook, worksheet, paper	-	-	-.41	.01
F135	Teacher interacts with outside intruder	-.25	.05	-	-
	Off-Task				
F123	Interaction: organization	-.34	.05	-.27	.05
F105	Adult offering students a choice of materials or activities	-.33	.05	-.31	.05
F102	Negative interactions	-.29	.05	-	-
F12	Social interaction	-.52	.001	-.30	.05

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*These may be considered to be trends.

S = Snapshot of activities variables

F = Five minute interaction variables

However, we were eager to see whether Phase II process/product findings would replicate the findings of Phase I.

Instruments

The SRI Secondary Observation Instrument was used in both Phase I and Phase II. This is a comprehensive system that documents the activities that occur, the material used, the grouping patterns, and the interactions of the teacher and students. From these data a list of 165 variables was generated that was used in both phases of the study. In Phase II six new variables were generated that subsumed several low frequency variables used in Phase I.

Scores on the Comprehensive Test of Basic Skills (CTBS) were used both years. These were converted to standard scores since many forms and levels were used. In Phase II one site had only California Achievement Test scores available. These scores were also converted to standard scores.

Analysis

To verify the accuracy of the conversion of the Fresno CAT reading test scores to CTBS Form S scores (see Section IV), we computed the correlation of classroom processes and student outcomes without the Fresno data. The new set of correlations was based upon 21 classrooms. The results were the same or in the same direction as the ones reported on Table 14. However, two variables regarding open-ended questions, r = .45, and extended student responses, r = .50, no longer appeared in the data.

On-Task/Instruction

The on-task variable that correlated significantly with reading gain in both phases is discussion (S7). This variable was recorded when the teacher was reviewing, or discussing, or going over assignments completed. A subset of that variable is discussion of work in workbooks or on worksheets (S51) which is also correlated with gain in both phases. This latter variable is more specific and describes the teacher going over workbook material completed with the students. Another variable that describes a structured on-task behavior is drill and practice (S8); it correlates significantly with gain only in Phase II. This drill and practice variable is low frequency and could be confused with discussion if the teacher is questioning students as they go over their work. Thus it probably should be included in discussion or instruction.

Reading aloud (F43) is correlated with reading gain in both phases but the correlation is not as high in Phase II as in Phase I. In Phase I an analysis of variance indicated that reading aloud is of more value to students of lower reading ability than it is to students of moderate or high ability. There does seem to be an aptitude treatment interaction there.

A surprise in the Phase II data was that student-initiated questions or comments (F3) were positively related to gain ($r = .32$); in Phase I this variable had a low negative correlation of $r = -.22$ with gain. As previously stated, this is a different group of classrooms and the student questions could have been right on-task. These variables certainly suggest student involvement.

The feedback variables differ somewhat for the two phases. Specific praise and support for reading tasks (F71) has a very high correlation (.54) with gain in Phase II whereas praise in general (F72) is correlated with reading gain in Phase I but the correlation is not high (.25). The three corrective feedback variables (F110, 113, and 114) that are significantly related in Phase I and II are slightly different but all are a very supportive type of correction. Teachers provide feedback and monitoring in many ways--to groups or individuals--sometimes by moving around the classroom and checking student work or listening to student questions and comments. Variable F92 describes monitoring and has a correlation of .42 with gain in Phase II.

The trends are similar in the correlations for both years toward using discussions to provide feedback, having students read aloud, and providing a supportive environment.

Teacher not Involved with Students

Teachers who spent more time alone in management activities had students who gained less in reading (see Table 14). This negative relationship was found in both Phase I and Phase II, on variables constructed from the snapshot of activities (S2) and the five minute interactions (F90). If teachers are frequently not involved with students and are grading papers, making lesson plans, etc., they have most likely given a long written assignment or a silent reading assignment that keeps the students busy for long periods of time. In classrooms where students were more often observed to be reading silently (S81) or doing written assignments (S108) less gain was made. Taken in moderation these two activities are likely to be useful to student learning. This finding relates to classrooms where these activities occur with high frequency (as much as 48% of the time). Another variable from the snapshot with a strong negative correlation to gain includes the teacher who is also reading silently (S3). A sustained silent reading program where teachers serve as models for reading might be effective with students already reading at grade level, but our data indicate this is not helpful to remedial students. Students' unmonitored silent reading may not only be non-reading, but students are not receiving the support and stimulation needed during this period.

Off-Task Behavior

The off-task behavior related negatively to gain very similarly in Phase I and Phase II. Variables that reflect off-task behavior are those that have to do with conversation about organizing the classroom. In these organization interactions (F123) the teacher is asking the class, for example, to pass books or papers, to straighten chairs, or to clean the chalkboard; or is giving them school announcements. The more time it takes for organization activities the less time there is to provide reading instruction. Offering choices to students acts in a similar way--it takes time for the student to decide and thus less time is spent on reading. In Phases I and II the variable offers student choice (F105) is negatively related to achievement.

In classrooms where there was more socializing (F12) among the participants, there was less student gain in both Phases I and II. Student misbehavior (F102) was correlated negatively in Phase I. In Phase II this variable was very low in frequency of occurrence and does not correlate with gain.

Summary

Findings from Phase I and Phase II provide very clear guidance for secondary teachers of basic reading. It is of utmost importance for teachers to stay involved with the students through discussing their work, providing instruction, and guiding and supporting through feedback. When teachers meet with students only 40-50 minutes a day those minutes must be considered golden and not to be spent on activities with little academic return.

Students' Perceptions of the Classroom Environment

In Phase I, high correlations were found between the student rating scales and student achievement. Since this is another source of information about the classroom procedures, it is of interest to see how the students' perceptions of the classrooms relate to the observations made in the classrooms. Both sets of data were collected in spring 1978.

We have reports from approximately 1,200 students from 42 classrooms. These reports are of two kinds: one is a rating of instructors on four scales and the other contains nine environmental scales. To see how the students' perceptions relate to the observed processes we computed Pearson product-moment correlations. The result of these analyses are shown in Tables 15, 16, 17, and 18. The significant positive correlations p > .05 are reported as a "+" in each scale column. The significant negative correlations are reported as a "-" in each scale column. These symbols are used in order to give the reader an overall picture of the results. Tables of the correlations and significance levels are available from SRI for those who want these data.

Student Rating Scale of Instructors

Students were asked to rate their instructors on 16 items on a scale of 1-5. This scale is presented in Appendix A. Seven items comprise the teacher Professional Scale. These include such characteristics as being prepared, meaningful assignments, etc. The Personalized Scale is made up of seven items describing situations that make the student feel that the teacher cares about him/her personally. The Fair Scale and the Enjoy Scale are each single items that reflect how the students feel (i.e., Is the teacher fair? Does the student enjoy the class?).

A positive correlation indicates that students rated the instructor higher on the scale in classrooms where the variable was observed to occur more frequently. A negative correlation indicates that students rated the instructor lower on the scale in classrooms where the variable was observed to occur more frequently. The ratings reflect the students' perception on how they feel about the teacher or classroom.

Off-Task Behavior

The first group of variables on Table 15 describe off-task behavior. Students enjoy classrooms where there are social interactions (S12 and F56), but they feel the teacher is less professional and they experience less individual attention in this environment. The students also feel the teacher is less professional in classrooms where the students are less involved (S13), where students make more negative comments about assignments (F119), and where teachers provide instruction on subjects

Table 15

SIGNIFICANT CORRELATIONS OF STUDENT RATING SCALE OF INSTRUCTORS AND OBSERVED CLASSROOM PROCESSES
(N = 42)

Variable Number		Professionalism	Personalized Instruction	Fair	Enjoy
	Off-Task				
S12	Total for activity: social interaction	-	-		+
F56	All social comments	-	-		+
S13	Total for activity: student uninvolved	-			
F119	Student expressing dislike for classroom assignments	-			
S11	Total for activity: non-math or reading instruction	-			
F78	Adult corrective feedback, behavior				+
S117	Independent student being disciplined	-	-	-	
F100	All adult negative behavior	-	-	-	-
F101	All student negative behavior	-			
	On-Task/Instruction				
F5	All adult to individual students, verbal		+	+	
F13	All student open-ended questions or requests			+	
F17	Adults commands, requests, and direct questions to students, reading	+	+	+	
F61	Adult acknowledgement to students, reading	+	+	+	
F70	Adult praise and support, reading	+	+	+	
F76	All adult corrective feedback, task or reading	+	+	+	
F29	All student responses to adult command, request, or direct question, task or reading	+	+	+	
F40	Students extended responses, reading	+	+	+	+
F94	All classroom interactions, reading	+	+	+	
F20	Adult open-ended questions or requests to students, reading				+
S17	Total for material: workbook, worksheet		+	+	
S81	Student silently reading: workbook, worksheet		+		
S22	Total for material: non-curricular reading		-	-	
	Teacher Not Involved with Students				
S2	Teacher without students on classroom management	-	-	-	-
F90	All adult non-interacting with students				-
F122	Adult without students involved in organizing classroom	-	-		-
S92	Student receiving instruction: from machine, chalkboard				-
S84	Student silently reading: non-curricular leisure reading		-		
S28	Teacher with students reading silently: non-curricular reading	-		-	
S24	Teacher with students reading silently: textbooks	-		-	

+ = significant positive correlation p >.05

- = significant negative correlation p >.05

other than reading (S11), e.g., current events. In classrooms where there is more corrective feedback for behavior, the students report more enjoyment (F78) but they feel the teacher is less professional where more disciplining must occur (S117). In fact, when adults show negative behavior (F100) (i.e., shouting, angry, demeaning statements) the students feel the adults are less professional and less fair. Further, the students experience their needs less attended to and they enjoy the class less. In classrooms where more student negative behavior is shown, the students feel the teacher is less professional (F101).

On-Task/Instruction

The next set of variables on Table 15 is related to on-task behavior where the teacher is instructing and students are involved. Clearly students perceived the teachers to be more professional and fair and the students experienced more personalized instruction in classrooms where the teacher is more involved with the students through questions about reading (F17) and feedback--both positive (F61, F70) and corrective (F76)--to the students' responses (F29, F40). This set of variables describes a structured classroom where the teacher is in control of the instruction time and is focused on reading (F94).

Students enjoy classrooms where more open-ended questions are asked about reading (F20) and where more students make extended responses about reading (F40).

Students think teachers are fair when students have more opportunities to ask open-ended questions (F13). They also experience what they consider fairness in classrooms where workbooks are used more frequently and seem to receive more personalized attention in these classrooms (S17, S81).

The only negative relationship found with an activity that appears to be on the task of reading is teacher and students non-curricular reading (S22). Students apparently perceive this to be unfair and do not receive the personalized attention they desire. This variable could describe the sustained silent reading period some schools require, when teachers and student read silently for 10-15 minutes.

Teacher Not Involved with Students

The next set of variables describes situations where the teacher is not involved with the students. Variables S2, F90 and F122 indicate that teachers are grading papers, making lesson plans or passing materials. Where this occurs more frequently the students feel the teacher is less professional, they experience less personalized attention and they enjoy the class less. Students enjoy class less where there is more instruction from machines (S92). Students doing more silent reading from leisure books feel they do not receive as much personalized attention (S84). Further, they do not feel it is fair or professional for teachers to do silent reading (S24, S28).*

Classroom Environment Scale

The significant p > .05 correlations of the nine environmental scales with selected process variables are displayed on Tables 16, 17, and 18. Each scale has a range of 1-4. Means for each scale were computed for each classroom. The variables are organized into three groups describing off-task behavior, on-task/instruction and instances where the teacher is not involved with students. In the previous section these sets of variables were found to be related to student achievement so it is of interest to see how the rating scales relate to these constructs. (See Appendix A for sample scale.)

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*These silent reading variables (S24, S28 and S84) are a subset of variable S22, non-curricular reading. These separate components indicate how the students feel about their leisure reading apart from teachers' leisure reading. The students perceive that too much leisure reading is not a good thing, especially if the teacher is reading also and is not available for help during that time. The percentage of time observed in this activity ranged as high as 48%. This finding concerning students' attitudes, coupled with the negative correlation between silent reading and student gains, clearly indicates that students who have difficulty in reading need instruction and should not be assigned to read silently or be without assistance for long periods.

Off-Task Behavior

In classrooms where there are more social interactions (S12) the students say they feel more affiliation but less task involvement (see Table 16). In classrooms where students are less involved (S13) the students report less order and organization, less rule clarity and less teacher control. Classrooms that have more negative behavior (F78, F88, F100, F101, F109, F119) are perceived to have less order and organization and the rules seem less clear. However, students do feel that in classrooms where adults provide more corrective feedback (F78), they receive more teacher support but students are more competitive. Students report that they are less involved in classrooms where the teacher shows negative behavior (F100) and they think this teacher is less innovative. Positive student behavior is positively correlated to rule clarity, teacher support, teacher control, competition and affiliation.

On-Task/Instruction

Students who rated their class high on task orientation were in classrooms where there was less discussion (S7), more written assignments (S9), more reading games (S19), and more reading interactions (F2). (See Table 17.)

Students who rated their classroom high on order and organization more often used reading games (S19), the teachers more often asked questions about reading (F17), the students responded (F25) and adults provided feedback (F76). These last three variables describe a very structured environment where the teacher is in control (see Teacher Control Column).

Students felt more teacher support in classrooms when there was more reading instruction (S6, F2). They also felt support in the structured environment described in the preceding paragraph.

Students reported feeling competitive where there was more reading aloud (S4) and more reading games (S19). Competition also was

Table 16

CORRELATIONS BETWEEN ENVIRONMENTAL RATING SCALES AND OBSERVED CLASSROOM PROCESSES: OFF-TASK BEHAVIOR
(N = 42)

Variable Number	Off-Task Behavior	Involvement	Task Orientation	Order and Organization	Rule Clarity	Teacher Support	Teacher Control	Competition	Affiliation	Inventiveness
S12	Total for activity: social interaction		-						+	
S13	Total for activity: student uninvolved			-	-		-			
F78	Adult corrective feedback, behavior			-		+		+		+
F88	All student refusal to comply with adult request			-						
F100	All adult negative behavior	-								-
F101	All student negative behavior			-	-					
F98	All student positive behavior				+	+	+	+	+	
F109	All classroom punitive behavior			-	-					
F119	Student expressing dislike for classroom assignments			-					+	+

"+" = significant positive correlation $p > .05$.
"-" = significant negative correlation $p > .05$.

Table 17

CORRELATIONS BETWEEN ENVIRONMENTAL RATING SCALES AND OBSERVED CLASSROOM PROCESSES: ON-TASK/INSTRUCTION

(N = 42)

Variable Number	On-Task/Instruction	Involvement	Task Orientation	Order and Organization	Rule Clarity	Teacher Support	Teacher Control	Competition	Affiliation	Inventiveness
S4	Total for activity: reading aloud							+	+	
S6	Total for activity: instruction					+			+	+
S7	Total for activity: discussion		-						+	+
S9	Total for activity: written assignments		+							-
S19	Total for material: game/manipulative material		+	+				+		
S20	Total for material: reading/math kit					-	+			-
F2	Adult to student, all verbal, task or reading		+			+		+		+
F9	Student commands, requests, and direct questions, reading only							-	+	
F17	Adults commands, requests, and direct questions to students, reading			+		+	+	+		
F20	Adult open-ended questions or requests to students, reading					+				
F25	Student responses to an adult, reading			+		+	+	+		
F40	Students extended responses, reading	-								
F70	Adult praise and support, reading					+		+		+
F76	All adult corrective feedback, task or reading			+				+		
F117	Student response unacceptable, adult rephrases question					+		+	+	

experienced in the more structured drill and practice classrooms (F17, F25, F70, F117). More affiliation was experienced in classrooms that were more interactive, i.e., discussions (S7), reading aloud (S4), students asking questions (F9).

Students felt the teacher was innovative when there was more reading instruction (S6), discussions (S7), and praise and support (F70). Teachers were considered less inventive when there were more written assignments and use of reading kits.

No significant correlations were found between rule clarity and this set of process variables. Only one correlation with involvement was found, indicating that students are less involved in classrooms where students make extended responses to questions.

Teacher Not Involved with Students

This set of variables was negatively related to achievement (see Table 18). Here we find that students perceive teacher support to be lacking when teachers are not involved with students. There is less competition, less affiliation and less teacher inventiveness reported in this environment. In classrooms where teachers are not involved the students seem more apathetic in their responses toward the class.

Summary

There were many significant correlations between the student ratings and the classroom process variables. This is a good indication that secondary student ratings can be used to describe classrooms quite adequately. In that the correlations are consistent, this is a cross validation of both methodologies.

Absence Rate

Most educators agree that absences are a matter of concern in the American education system. Some urban schools have reported that on

Table 18

CORRELATIONS BETWEEN ENVIRONMENTAL RATING SCALES AND OBSERVED CLASSROOM PROCESSES: TEACHER NOT INVOLVED WITH STUDENTS

(N = 42)

Variable Number	Teacher Not Involved With Students	Involvement	Task Orientation	Order and Organization	Rule Clarity	Teacher Support	Teacher Control	Competition	Affiliation	Inventiveness
S2	Teacher without students on classroom management	-				-		-	-	-
S3	Total for activity: reading silently					-		-	-	-
S22	Total for material: non-curricular reading	-				-			-	
F90	All adult non-interacting with students					-		-	-	-
F122	Adult without students involved in organizing classroom					-		-	-	-

any current school day more students are absent than present in school (New York Times, 1970).

Absences affect various levels within a school system: the student, the classroom teachers, and the administration. The student is affected by the material that he has missed during his absence, and excessive absence can cause him to fall drastically behind his classmates in academic work. Some educators view absenteeism in the higher grades as a predictor of students who will drop out of school before graduating from high school (Baltimore City Public Schools, 1972). Teachers are affected by absences through the disruption of continuity within their classrooms. A returning student must be presented with the material that was taught during his absence while the remainder of the class must be offered more advanced materials. A large number of children who are constantly absent from school can be a source of frustration to even the most conscientious, well-organized teacher. School administrators experience the impact of absences in the school system's budget. School systems usually receive their funds on the basis of average daily attendance, and consequently a school district can suffer economically as a result of a high absentee rate.

In an effort to bring absences to a minimum, several studies have investigated the causes of students' absences. The variables studied have included length of school day, weather, student grades, student and/or teacher attitudes, and school curriculum (Karweit, 1973). Findings from these studies were inconclusive and none investigated classroom instructional processes.

In a Follow Through Classroom Observation Evaluation 1972-73 (Stallings and Kaskowitz, 1974), SRI staff identified process variables that accounted for 67% of the variance in absence rate in Grade 3 classrooms. In that study the students were absent less often in classrooms that had more choice of materials, activities, and work groups; and where they could ask questions, be involved with the teacher, and talk to each other a little more.

Through Pearson product-moment correlations in Phase I of the basic skills study, we identified several classroom process variables and student ratings that were related to student absence. Those data suggested that in classrooms where teachers were more often involved with students (through discussions and questioning) and were warm and supportive, the students were absent less often. (See Appendix D for Phase I tables.) Students in Phase I were also absent less often in classrooms where they perceived the rules to be more clear and they felt more affiliation. They were absent more often in classrooms where more time was allotted to silent leisure reading. This is an activity where the teacher is not involved with students.

In Phase II, we were interested to see whether similar classroom process variables and student rating variables would be related to student absence. Pearson product-moment correlations were computed using the mean absence rate for each class for the spring semester. We considered using classroom cuts as well as unexcused absences in these analyses. However, the teachers did not keep these records systematically and these analyses proved to be impossible to complete. Table 19 presents the relationship between classroom processes, student ratings, and student absence that were found to be significant.

Students were absent less often in classrooms where they felt more affiliation (A) (this finding replicates Phase I results), where there was more competition (C) and the teacher was involved with them. The involvement was in the form of instruction (S6, F7, F49, F52) and reading aloud (S4, F43).

The students were absent more often in classes where the teachers were less involved with students (F122), students were alone doing written assignments (S9) and reading silently (S3). Findings for the silent reading (which is like the leisure reading variable of Phase I) are similar for each year of the study (S3). Students are absent more often where silent reading occurs more frequently. Students are also absent more often in classrooms where more disciplining occurs (S14).

Table 19

CORRELATION OF ABSENCE RATE AND PROCESS VARIABLES
(N = 37)

Variable Number	Description	r	p
A	Affiliation	-.41	.005
C	Competition	-.38	.01
S6	Total for activity: instruction	-.28	.05
F7	All adult to entire class, verbal	-.32	.01
F49	Adult instructs entire class, task or reading	-.27	.05
F52	Student presenting information to a group, task	-.29	.05
S4	Total for activity: reading aloud	-.33	.01
F43	Student reading aloud	-.28	.05
S3	Total for activity: reading silently	.53	.001
S9	Total for activity: written assignments	.39	.001
F122	Adult without students involved in organizing classroom	.30	.05
S14	Total for activity: being disciplined	.37	.01

Clearly, students come to school more often when the teachers are more involved and the classroom climate is more calm.

Absence rate ranged from 0 to 15 days. Within this range there is not a correlation with reading gain. It is more likely that students who are absent more than three weeks are dropped from the rolls and do not appear in the student test data. This procedure would prohibit examining the effect of absence on test scores since students who were frequently absent and who most likely had low test scores would be eliminated from the data. An examination is needed of the number of students who were dropped for absenteeism from these classes.

IX ANALYSIS OF ACHIEVEMENT GROUPS

Determination of Achievement Groups by Scattergram

In Phase I we found through an analysis of pretest and posttest scores that the classrooms could be grouped according to entry scores and achievement gain. Plotting classrooms by these dimensions on a scattergram allowed us to identify four groups of classrooms to study. The primary objective of that study was to examine relationships between classroom processes and achievement in terms of defining those processes most relevant to producing high test score gains. It was hypothesized that a classroom with very low pretest scores that made substantial gain would differ in instructional processes from a classroom with identical gain but a high pretest level. This hypothesis was confirmed and instructional processes associated with four groups were identified. The groups identified on the scattergram were the following: I Low pretest/high gain, II Moderate pretest/moderate gain, III High pretest/moderate gain, and IV No gain.

In an effort to replicate that part of the study we prepared a scattergram of the 28 classes that had pretest and posttest achievement data available in the Phase II analysis (see Figure 6). The determination of achievement groups required several steps. First, a "no-gain" line was defined (posttest - pretest = 0); that is, there was no difference between pre- and posttest score means. Second, as consistent with other studies of this type (e.g., McDonald, 1976), the "gain" line was set at one-third of the standard deviation of the mean class gain scores (13 units) above the no-gain line. The no-gain group, then, becomes those classrooms with posttest-pretest differences falling between the one-third standard deviation gain line and the no-gain line. The "gainers" were assigned to three groups on the basis of pretest score levels: Group I, low pretest/high gain; Group II, moderate

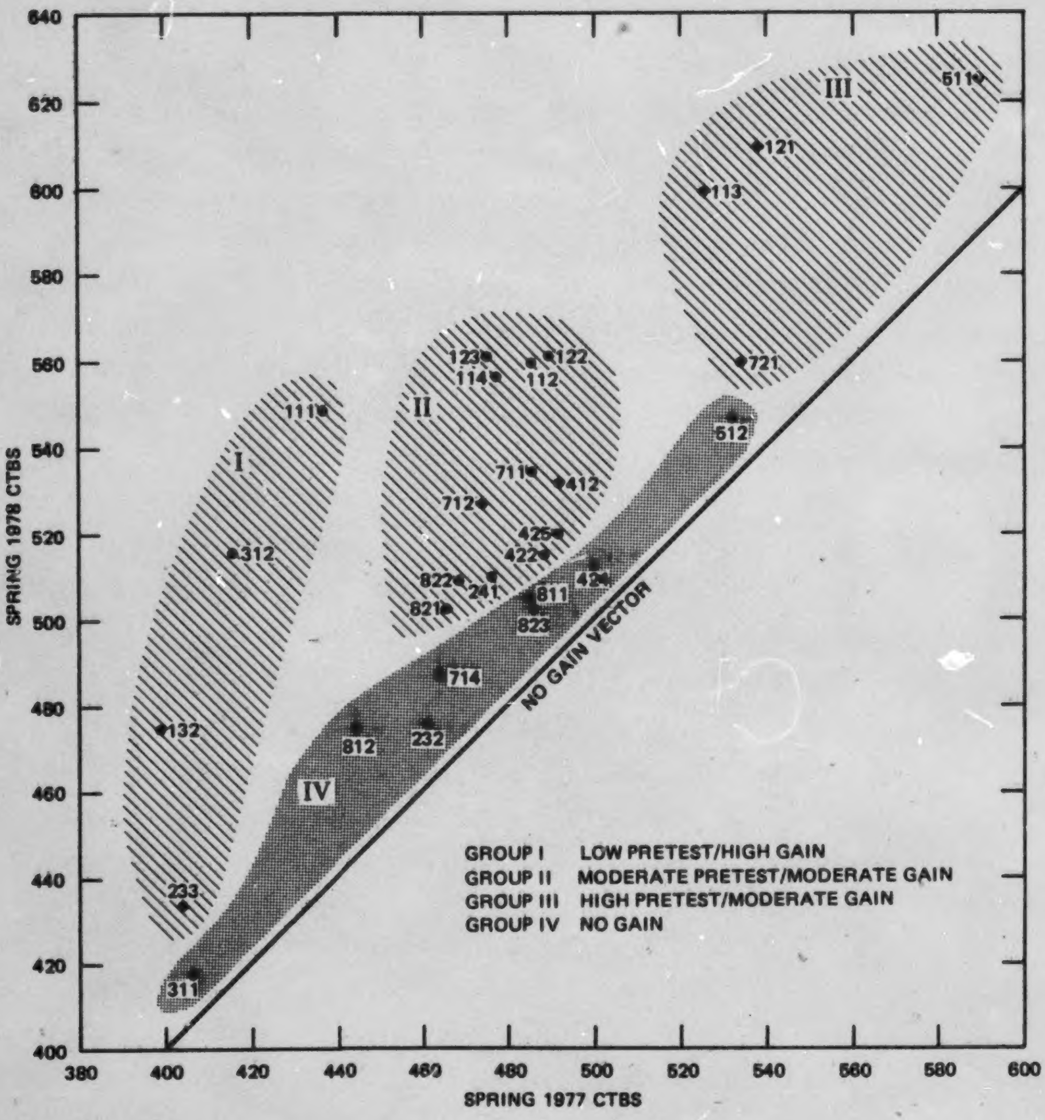

FIGURE 6 SCATTERGRAM OF PHASE II PRETEST AND POSTEST—CTBS SCORES

pretest/moderate gain; and Group III, high pretest/moderate gain. The pretest/posttest scattergram resulted in the groups of classrooms shown in Table 20.

Table 20

NUMBER OF CLASSES IN EACH ACHIEVEMENT GROUP

Groups		Number of Classes
I	Low pretest/high gain	4
II	Moderate pretest/moderate gain	12
III	High pretest/moderate gain	4
IV	No gain	8

Discriminant Function

In order to ascertain whether the groups defined by achievement and pretest score level differed in structure, a discriminant analysis was conducted using the four groups from Figure 6. We wanted to see if a discriminant analysis would confirm the legitimacy of the a priori groups. A stepwise discrimant procedure was conducted using an F-to-enter criterion of approximately .10. Based upon prior research findings and the utility of the variables in describing classroom procedures, 19 variables were selected for the analysis. The results showed that 11 classroom process and demographic variables and two discriminant functions were sufficient to correctly classify all classrooms into the appropriate a priori groups (Table 21). Therefore, the four groups should differ in both pretest-posttest differences and classroom processes.

Table 21

CLASSIFICATION OF A PRIORI GROUPS BY DISCRIMINANT ANALYSIS

Actual Group		Number of Cases	Predicted Group Membership (%)			
			I	II	III	IV
I	Low pretest/high gain	4	100	-	-	-
II	Moderate pretest/moderate gain	12	-	100	-	-
III	High pretest/moderate gain	4	-	-	100	-
IV	No gain	8	-	-	-	100

The discriminant analysis presented a statistical confirmation of the groups derived from Figure 6, providing a measure of confidence in proceeding with analyses to determine within-group composition and intergroup differences.

Demographic Characteristics

District demographic characteristics such as amount of money spent per student did not explain why some classrooms gained and others did not. No one group was made up of classrooms all from the same district, and the two largest districts had some classrooms in each of the four achievement groups.

A comparison of the demographic characteristics presented on Table 22 indicates that the gains made by Group I were the same in Phase I and Phase II. The average enrollment for the two phases differed by 11 students. In the Phase II Group I classes the students were absent less often and the enrollment was lower.

Groups II and III of Phase II scored higher on the pretest but made less gain than did Groups II and III in Phase I.

The no-gain groups have similar pretest scores in both phases but the Phase I Group IV only averaged 5.37 gain whereas the Phase II

Table 22

DEMOGRAPHIC CHARACTERISTICS OF THE ACHIEVEMENT GROUPS - PHASES I AND II

Group	Number of Classes	Number of Students		Days Absent		Pretest Scores (CTBS)		Posttest Scores (CTBS)		Gain	
		$\bar{X}$	$\overline{\text{SD}}$	X	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Phase I											
I Low Pretest/ High Gain	4	26.50	2.08	13.77	4.39	354.43	35.65	433.12	5.80	78.69	33.74
II Moderate Pretest/ Moderate Gain	7	23.00	7.37	15.86	4.71	423.25	19.30	492.77	20.00	60.52	21.20
III High Pretest/ Moderate Gain	4	25.50	4.04	8.80	5.67	495.71	29.50	557.91	24.93	62.20	25.46
IV No Gain	7	22.29	4.07	10.19	6.44	465.26	64.83	470.63	63.16	5.37	11.14
Phase II											
I Low Pretest/ High Gain	4	15.25	7.93	9.83	5.90	414.49	16.64	493.32	50.06	78.83	36.58
II Moderate Pretest/ Moderate Gain	12	20.50	6.36	11.72	5.28	480.83	9.18	532.62	22.29	51.79	21.16
III High Pretest/ Moderate Gain	4	26.50	5.32	9.89	5.18	547.08	29.15	596.09	28.03	49.01	22.34
IV No Gain	8	24.50	4.81	10.67	4.86	472.18	37.39	490.13	36.30	17.95	7.27

Group IV averaged 17.95 gain. They had similar enrollments and a similar number of days absent.

Analysis of Variance

In order to examine intergroup differences, one-way analyses of variance were conducted on all observation variables in order to help explain the differences between the a priori groupings. Variables found to be significantly different at the $p > .05$ level were then chosen as discriminants of the four groups.

Because of the nature of a simultaneous comparison of the four groups in an analysis of variance, comparison between the no-gain group and each of the three gain groups might identify additional variables capable of explaining differences between the gain groups and the no-gain group. Accordingly, the mean scores of each group calculated during the analyses of variance were examined.

The observation data used in these analyses were collected in the spring after teacher training stopped. Thus, we might expect the particular variables we had stressed in training to occur with greater frequency in Phase II gain groups than in Phase I.

Group I: Low Pretest/High Gain

Secondary students who enter class with very limited basic skills are often demoralized and difficult to motivate. Some teachers feel hopeless in trying to teach these students. Thus, the four teachers in both Phases I and II who were able to help very low performing students gain an average of 79 standard score points deserve special study.

To study how the instructional processes used by the Group I gain teachers differed from those used by the Group IV no-gain teachers, we computed analyses of variance to test the statistical difference between the groups. Table 23 compares the groups and includes variables that are statistically significant as well as variables that occur in one group but have zero occurrence in the other group. Variables that

Table 23

MEANS AND STANDARD DEVIATIONS
FOR GROUP I--LOW PRETEST/HIGH GAIN AND GROUP IV NO GAIN

		Group I Low Pretest/High Gain		Group IV No Gain	
Variable Number	On-Task/Instruction	$\overline{X}$ Phase I (N=4)	$\overline{X}$ Phase II (N=4)	$\overline{X}$ Phase I (N=7)	$\overline{X}$ Phase II (N=8)
S4	Total for activity: reading aloud	8.54	21.23*	2.94	1.32
F43	Student reading aloud	40.33	49.50*	20.19	2.00
S6	Total for activity: instruction	12.21	16.41	8.76	10.53
S7	Total for activity: discussion	5.61	11.58*	1.34	.59
F5	All adult to individual students, verbal	64.50	69.33	96.10	64.20
F6	All adult to groups of students, verbal	18.50	8.83	11.00	25.75
F7	All adult to entire class, verbal	87.00	39.92	38.29	36.58
F70	Adult praise and support, reading	7.00	19.32*	2.03	11.41
F76	All adult corrective feedback, task or reading	9.00	17.83	12.52	11.79
F94	All classroom interactions, reading	221.00	222.00	213.10	196.00
F95	All classroom interactions, task	9.67	11.92	5.43	3.50
	Teacher not Involved with Students				
S3	Total for activity: reading silently	3.73	9.38*	2.28	21.44
S9	Total for activity: written assignments	4.84	3.48*	22.16	27.82
F90	All adult non-interacting with students	14.32	16.87	60.01	50.83
S2	Teacher without students on classroom management	1.17	11.67	6.71	22.68
	Off-Task				
F56	All social comments	3.01	2.08	10.39	7.50
F96	All classroom interactions, behavior	6.00	7.83	21.00	6.25
F123	All interactions involved organization or assignments	-	39.66	-	68.16

S = Snapshot variables: percentage of time occurring during observations.

F = Five minute interaction variables: frequency of occurrence per 300 interactions.

*Statistically different $p > .05$.

are educationally meaningful and illustrate classroom organization and interaction patterns are included for descriptive purposes. Table 23 presents the means of Phases I and II so that the reader can compare the results of the two phases.[*]

Several variables describing the teachers as actively involved in the instruction of students distinguished between the gain and no-gain groups in both phases. The variables--reading aloud (S4, F43), instruction (S6), and discussion (S7)--occurred more frequently in Phase II than in Phase I (see Table 23). We speculate that this increase reflects the effect of training of Phase II teachers.

Students in the classrooms that gained received more praise and support (F70) in both phases. They also received more positive corrective feedback when their responses to questions were wrong (F76).

The teachers of Group I in both phases interacted with individuals at about the same rate (F5). In Phase I the gain teachers more often interacted with groups (F6), but in Phase II the no-gain teachers more often spoke to groups. This is a curious finding in that we instructed the Phase II teachers to group students. It is possible that the students were in groups but that the teachers spoke to one student at a time, and this grouping arrangement would not appear in these data. Overall the interactions of the teachers in the gain groups were more often related to reading (F94) or other tasks (F95) than were the teachers of no-gain classrooms.

During the training workshops a second strong recommendation was made in Phase II for teachers to stay actively engaged with the students. They were instructed not to carry on management activities (i.e., grading papers) during the class period. When teachers spend a lot of time doing these management tasks they have usually made lengthy writing assignments or assigned lengthy passages for students to read silently. In the no-gain Group IV, teachers in both phases were found to be without students (S2) much more often than the teachers who had students who gained. Of the 300 interactions recorded in Phase II no-gain classrooms, an average of 51 was recorded when the teachers were not engaged with students (F90). There were also more social comments--indicating off-task behavior (F56)--in the no-gain Phase II classrooms.

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[*] Standard deviations are available from SRI, Menlo Park, CA.

The students in the no-gain classrooms in both phases were working on written assignments (S9) more of the time than were students in gain classrooms. The reader is reminded of the negative correlations between reading gain and silent reading, and between reading gain and written assignments that were reported in the previous section. Two variables describing activities that are not productively related to reading gain are interactions about behavior (F96) and time spent organizing class (F123), i.e., passing books or papers. In Phase I the no-gain classrooms had three times as many interactions about behavior as did the gain classrooms. In Phase II such a difference was not found. However, in Phase II the no-gain classrooms had twice as many interactions regarding organization and management as did the gain classrooms.

Over the two-year study it appears that teachers working with low ability students should take an active part in instruction by having students read aloud, discuss written work, provide praise, support, and positive corrective feedback. They should not make lengthy written or silent reading assignments. Class time should be an active instruction time.

Group II - Moderate Pretest/Moderate Gain

Most of the students in Group II moderate pretest/moderate gain classrooms are reading at the level of upper elementary students. Here we find less reading aloud (S4) than in the low pretest/high gain Group I, but significantly more in Phase II than in the no-gain Group IV. (See Table 24, Variables S4 and F43). While in our workshops we stressed reading aloud more for lower performing students, we encouraged teachers to give all students many opportunities to read aloud.

Table 24

MEANS AND STANDARD DEVIATIONS
FOR GROUP II--MODERATE PRETEST/MODERATE GAIN AND GROUP IV--NO GAIN

Variable Number		Group II Mod Pretest/Mod Gain		Group IV No Gain	
		$\bar{X}$ Phase I (N=7)	$\bar{X}$ Phase II (N=12)	$\bar{X}$ Phase I (N=7)	$\bar{X}$ Phase II (N=8)
	On-Task/Instruction				
S4	Total for activity: reading aloud	2.71	8.69	2.94	1.32
S6	Total for activity: instruction	10.54	11.35	8.76	10.53
S7	Total for activity: discussion	3.19	4.78*	1.34	.59
S8	Total for activity: practice, drill	1.01	3.96*	.73	1.86
F5	All adult to individual students, verbal	83.29	66.83	96.10	64.20
F6	All adult to groups of students, verbal	2.71	7.83	11.01	25.75
F7	All adult to entire class, verbal	54.00	35.81	38.29	36.58
F8	Student commands, requests, and direct questions, task or reading	7.76	8.31	18.90	9.42
F43	Student reading aloud	23.04	22.34*	20.19	2.00
F70	Adult praise and support, reading	22.62	16.19	18.09	11.41
F76	All adult corrective feedback, task or reading	15.43	16.31	12.52	11.79
F94	All classroom interactions, reading	216.67	191.58	213.10	196.00
F95	All classroom interactions, task	3.33	13.13	5.43	3.50
	Teacher not Involved with Students				
S3	Total activity: reading silently	10.66	15.74*	2.28	21.44
S9	Total for activity: written assignments	26.79	22.88	22.16	22.82
F90	All adult non-interacting with students	35.01	39.42	60.01	50.83
	Off-Task				
S5	Total for activity: making assignments	.98	2.78	4.38	4.19
F96	All classroom interactions, behavior	3.52	6.53	21.00	6.25
F123	All interaction involved organization or assignments	56.57	70.31	50.67	68.16

S = Snapshot variables: percentage of time occurring during observations.

F = Five minute interaction variables: frequency of occurrence per 300 interactions.

*Statistically different $p > .05$.

Variable S7 indicates that the Group II teachers were spending more time discussing assignments than were the no-gain teachers. In the partial correlations in both Phase I and Phase II, discussion was found to be significantly related to reading gain. Instruction (S6) was approximately the same for the two groups in each phase.

In both phases, Group II spent approximately 4% of the observed time in drill and practice exercises (S8). This activity was significantly correlated with gain in reading in both phases. Drill and practice can be used to reinforce vocabulary and spelling skills and we encouraged teachers to use this strategy. The no-gain groups in Phase I and Phase II rarely had this activity occurring.

Teachers in both Phase II groups addressed their statements to individuals (F5) and to the total class (F7) at about the same rate. The no-gain group of teachers more often spoke to a small group of students (F6) than did Group II. This finding is similar to that reported in the previous section where low pretest/high gain are contrasted with no-gain. These data need further investigation regarding the actual grouping that occurred.

The number of questions and responses were about the same for all groups. The primary difference is seen in the amount of feedback given. Here support and praise (F70) and corrective feedback (F76) were provided more frequently by the Group II gain teachers in both phases.

Students were reading silently (S3) in the Phase II gain group approximately 15% of the time contrasted with 21% of the time in the no-gain group. Silent reading can be a useful activity if the teacher checks to see whether the students are understanding what they are reading. Without such monitoring it is easy for this to be a non-reading activity.

Overall, the teachers of Group II in both phases and the no-gain groups had approximately the same number of interactions regarding reading (F94) and organization (F123). The primary difference seems to be in the level of involvement in how the time was used. The Group II teachers were considerably more involved with students in both phases (F90). They had the students reading aloud, doing drill and practice, and discussing assignments completed; and they also offered support and feedback more frequently than did the no-gain teachers. The primary recommendations from these data seem to be for the teacher to stay actively involved with the students and provide ample support and feedback for the students' efforts. The recommendations are very similar to those for the Group I teachers described in the previous section except reading aloud does not need to occur as often and drill and practice activities occur more often.

Group III - High Pretest/Moderate Gain

Four teachers in both phases had students enter their classes with relatively higher scores and made on the average 49 standard grade score points. They had more students in their classes than did other groups and the students' abilities were of a greater range.

In both Phase I and Phase II, Group III included some classes where reading was being taught in the content area. Any subject matter other than reading was coded as "task" (F95). For the most part, this included social studies, science, and home economics teachers who were teaching basic reading within their subject area. Our data indicate that other task interactions (F95) occurred 13 times more frequently in Group III than it did in the no-gain group (see Table 25). Consequently, there were fewer reading interactions (F94) in Group III classrooms than in the no-gain classes.

We found for both phases more instruction (S6), more discussion (S7), and more drill and practice (S8) in Group III than in the no-gain group. Following this trend of the teacher's active involvement, the students in gain groups were less often reading silently (S3) and were observed to be more involved (S13). Students in all four groups were observed to be doing written assignments (S9) about 22% of the time.

Table 25

MEANS AND STANDARD DEVIATIONS FOR GROUP III--HIGH PRETEST/MODERATE GAIN AND GROUP IV--NO GAIN

Variable Number	On-Task/Instruction	Group III High Pretest/Mod Gain		Group IV No Gain	
		$\bar{X}$ Phase I (N=4)	$\bar{X}$ Phase II (N=4)	$\bar{X}$ Phase I (N=7)	$\bar{X}$ Phase II (N=8)
S4	Total for activity: reading aloud	7.69	.09	2.94	1.32
S6	Total for activity: instruction	17.38	17.25*	8.76	10.59
S7	Total for activity: discussion	3.05	2.72	1.34	.59
S8	Total for activity: practice, drill	4.10	4.40*	.73	1.86
F5	All adult to individual students, verbal	58.58	48.92	96.10	64.20
F6	All adult to groups of students, verbal	16.92	1.67*	11.01	25.75
F7	All adult to entire class, verbal	65.08	59.75	38.19	36.58
F8	Student commands, requests, and direct questions, task or reading	5.83	16.25	18.90	9.42
F16	Adult commands, requests, and direct questions to students, task or reading	22.01	21.83	25.14	32.50
F24	Student responses to an adult, task or reading	18.08	17.00	17.01	29.54
F34	Adult response to student requests or or questions, reading	5.01	14.58	10.32	8.33
F71	Adult praise and support, task or reading	12.01	7.42	18.09	11.41
F76	All adult corrective feedback, task or reading	10.02	4.00	12.52	11.79
F94	All classroom interactions, reading	164.00	131.58*	213.10	196.00
F95	All classroom interactions, task	71.75	41.25*	5.43	3.50
	Teacher not Involved with Students				
S3	Total for activity: reading silently	3.73	11.90*	2.28	21.44
S9	Total for activity: written assignments	21.01	23.00	22.16	22.82
S13	Total for activity: student uninvolved	2.04	4.43	8.92	7.82
F90	All adult non-interacting with students	37.67	41.92	60.01	50.83
	Off-Task				
S5	Total for activity: making assignments	3.98	4.43	4.38	4.19
F96	All classroom interactions, behavior	8.00	3.83	21.00	6.25

S = Snapshot variables: percentage of time occurring during observations.

F = Five minute interaction variables: frequency of occurrence per 300 interactions.

*Statistically different $p > .05$.

Group III teachers in both phases focused most of their instruction toward the total class (F7). They spoke to individuals or groups less often than did the no-gain group (F5, F6). This distribution of interactions is similar in both phases; it appears that it is efficient to address the total group when the students are more competent.

In these more competent Group III classrooms, we found the number of student questions and teacher questions to be about the same (F8 and F16). The response rates of teachers (F34) and students (F24) are also similar. This is quite different from the picture portrayed in the no-gain groups where the teacher asks many questions and students seldom do. Teachers in Group III did not offer as much praise and support or corrective feedback (F71, F76) as did the no-gain teachers. Perhaps the students in Group III received more intrinsic rewards from their work and do not at this level require as much verbal support. We observed very few remarks about behavior (F96), fewer than 7 per 300 interactions in the Group III classes of either phase, so we must conclude the students were on task most of the time.

The primary difference between Group III in both phases and the no-gain groups seems to be the active involvement of the students and teachers (F90 and S13). Group III had more instances of reading in the content area; their number of task interactions is greater than all other groups (F95). Group III students tend to ask more questions and tend to require less verbal support and feedback to achieve than do the less able students. However, as in the other two groups with lower ability students, the recommendation to teachers is to stay involved and plan interactive activites.

X SUMMARY AND RECOMMENDATIONS

Three analyses were conducted with this set of data: a comparison of treatment and control group teachers, correlations related to student outcomes, and analysis of variance between three gain groups and the no-gain group. How critical instructional process variables behaved across these analyses is of interest. This information can guide revisions in the teacher training program.

Findings

Treatment/Control Group Teachers

In comparing the behavior change of the treatment group of teachers and the control teachers we found that the treatment teachers tended to change their behavior in the direction we recommended or sustained the behavior to the same degree throughout the year. On 25 out of 31 variables they performed as recommended above or below the grand mean. The control teachers' behavior patterns on the same variables were erratic; some variables occurred more frequently in the winter observation and decreased in the spring. The variables that the training appeared to affect were those that describe teachers being actively engaged in the instruction of students. These variables included discussing assignments completed, listening to students read, and offering support and feedback. Variables describing the reduction on time off-task, non-interactive instruction and class organization and grouping were also implemented. Variables regarding reading aloud, silent reading and working with one student at a time were not implemented.

Correlations with Student Outcomes

The active involvement variables that were implemented by treatment teachers were also related to student achievement. More reading gain occurred in classrooms where teachers and students more often discussed or reviewed completed assignments, where students more often read aloud, and where more drill and practice occurred. A negative relationship to reading was found with social interactions and when teachers were not involved with students. These findings were consistent with findings in Phase I.

Teachers who had reading credentials tended to have students who made more gain in reading. Teachers who had fewer students in their class and teachers who were assigned permanent classrooms where they could establish a reading environment also had students who made more gain.

Student ratings of instructors were very similar to the systematic observations. The students enjoyed the classrooms and rated teachers more professional when teachers stayed engaged with the students. A negative relationship was found between students' rating of teacher professionality and the amount of silent leisure reading in which teacher and student engage. Some schools have a sustained silent reading program, with a rule that everyone in the classrooms will read silently for 10-15 minutes including the teacher. The theory here is that students need to see a model reading and enjoying it since many of their parents don't read. However, the theory is untested; our data suggest that the teacher should stay involved with the remedial reading students to help them to learn to read.

Analysis of Variance by Achievement Group

An analysis of variance compared the processes used by teachers of students who made very little gain with three groups of teachers whose students made gains. The findings of the analyses were similar in Phase I and Phase II. The no-gain classrooms tended to have teachers who were less often actively involved with students. These teachers more often gave students assignments to read silently and to do written assignments, and more often graded papers, made lesson plans, etc., during the class period. In the low pretest/high gain Group I the students more often read aloud to the teacher and discussed their work. They received more praise and support and corrective feedback. The students in the moderate pretest/moderate gain Group II also more often read aloud, had discussions, did drill and practice activities and received more praise and support and corrective feedback than did students in the no-gain group. The high pretest/moderate gain Group III of students received more instruction, had more interactions about reading and other subject matter than did students in the no-gain classrooms.

Implications for Teacher Training Program

On the basis of the three analyses, we would retain some components of our teacher training program and revise others. Some of the recommendations would be similar for students who are performing in the low pretest, moderate pretest, or high pretest groups. We would continue to encourage all teachers to:

- Stay involved with students
- Organize classrooms efficiently
- Include several activities in the class period:
    - Reading aloud
    - Instructing
    - Discussing work book assignments
    - Questioning
    - Providing support and feedback
- Limit silent reading to less than 15% of class time
- Limit written assignments to less than 20% of class time
- Discourage all off-task behavior
- Group low performing students so they have more opportunities to read aloud and to receive support and feedback.

Recommendations for Administrative Policy

From the workshops and research we learned of several important school policies related to teaching basic skills of which school administrators should be made aware. Even if teachers do plan their programs well and stay involved and keep students on task--it still may be very difficult to teach basic reading skills in particular environments. The following suggestions to administrators are based upon research findings and teacher recommendations.

Inservice Teacher Training

Clearly, teachers need a massive inservice teacher training program. Most of the teachers who have been assigned to teach remedial reading students have little or no training in teaching reading. Handicapped children are often in mainstream classrooms, but most teachers are not trained to work with these students. In many schools the special education teachers have little time to guide regular classroom teachers. As a result of integration policies, teachers find themselves working with students representing a variety of cultural backgrounds. Teachers need assistance to understand and cope with differing value systems and life styles. But in addition to inservice training, teachers need the support of the school administrative staff. Several administrative decisions and policies could ease the difficult tasks they face.

Assignment of Students to Reading Classes

Students who test in the normal range but are performing poorly are eligible for the Educationally Handicapped program. This program provides for classes that have only eight students assigned to them, and is federally financed. Students who test quite low are placed in Educationally Mentally Retarded (EMR) classrooms and are in small classes that are supported by state funds.

The students who are slow learners but do not qualify for EMR classrooms are placed in regular classrooms. These classes do not have teacher aides and they tend to be too large (25-30 students) for the teacher to do an adequate job of teaching the students. In classrooms of 25-30 remedial students, the teacher has a nearly impossible job of helping these students gain basic reading skills. Such classrooms should have fewer students assigned to them. To adhere to the district's established pupil/teacher ratio, it may be possible to assign fewer students to reading classes and more students to a class with subject matter that requires less focused attention or to classrooms that have higher achieving students who can work independently more often. The research indicates that success in learning basic reading skills is related to a low pupil/teacher ratio (Stallings, et al., 1978b). Low ability reading students also learn best when placed in reading classes with students of similar reading ability (Stallings, 1977).

Nearly blind or deaf, very limited-English-speaking, or non-English-speaking students should not be assigned to the regular basic reading skills classes. These students need individualized help that a teacher working with a group of poor readers cannot adequately provide.

Classrooms and Scheduling

Teachers of basic reading skills should be assigned permanent rooms. They need to be able to arrange a reading environment where student growth charts can be kept on the wall so that students can keep track of their progress. Teachers need to have diagnostic and prescriptive materials at their fingertips, and many high interest books at the right reading level. Teachers who have to shift from one classroom to another cannot achieve an environment conducive to developing basic reading skills.

The rooms need to be large so that students can be arranged in groups whenever small group instruction is needed. The research indicates that working in small groups is beneficial to those students in secondary classrooms who are reading at 1st, 2nd, or 3rd grade level (Stallings, 1978).

Reading classes for poor readers should not be assigned during the last period of the day. The last period is difficult for most students, but those who are poor readers are likely to find it particularly difficult to concentrate at the end of the day.

Grading System

Some variable grading system needs to be established for remedial classes. Students who have a history of failure thrive best when they can experience daily success, for example, in programs that are set up to allow these students to make daily gains and achieve 80% to 100% correct scores on their exercises. These students will be overwhelmed with a sense of failure if they still receive a D or F on their report cards because they are still below grade level. Some teachers tried to console their students by saying that a 90% F is not as bad as a 30% F. However, any F means failure to students and parents and may discourage students from trying further.

Possible alternative procedures are:

- Identify the course by name as a basic skills course for improvement in reading and give A, B, C, D, or F on the basis of the student's progress in the course. For example, a 10th grade student who tested at the 2nd grade level of reading when the course began and progressed to the 5th grade level made excellent progress. This student received an A even though he or she is still below grade level.
- Variable credit could be earned on the basis of productivity. In a five-credit course, students who complete one-half of the work in a semester might receive two and one-half credits of C work rather than failing to receive any credit and receiving an F. Some students learn more slowly than others but they can, and do, learn if given adequate time. "Faster is not necessarily better," says Benjamin Bloom (1976).
- In systems where the previous two suggestions are not used, E, S, or N might be used to show when excellent, satisfactory, or no progress has been made.

Statement of School Rules

A clear statement of rules is needed regarding tardiness, absenteeism, and misbehavior. The rules need to be consistently applied. Schools vary on these rules in several ways, as in the following examples:

- School 1--Students and parents sign a contract saying the student will be at school in class every day and the student will be on time, unless legitimately excused. If the student is tardy twice, the vice-principal talks with the pupil about the contract and the parent is called. After three tardies, the student has to make up an hour after school or at lunch time. Any time not made up accumulates and promotion or graduation is withheld if the time remains on the books. This system requires a lot of the vice-principal's time initially, but since the penalty is severe and is consistently carried out, the tardies and cuts are reduced to about zero. Consistency is the key here, and teachers who do not follow the rules, by not referring tardy students for discipline, are reprimanded by the principal.
- School 2--After three tardies or cuts, students are required to do some work at the school--emptying waste baskets, washing windows, or picking up papers. This work is for a specified period of time, either after school or at some other free period. The principal reported that tardiness was reduced 50%.
- School 3--Students who are tardy are reported to the office, but the office is overloaded with paperwork and there is no consistent policy of follow-up. In this situation, teachers made their own policy about tardiness. Some teachers require students to make up time after school. Teachers may join together and share the responsibility of staying with the detained students so that no one teacher is punished each night by having to stay late with tardy or misbehaving students. This system is more difficult to operate and less effective in reducing tardiness since students are confronted with different standards in each classroom and it is harder to develop good school habits.

Parent Support

Administrators can create an atmosphere where parents feel needed to help in their child's education--not only to work on school committees, but to really assist their child to learn required skills. Some skills simply need more drill or practice, and some ideas may need discussion. Research on the effect of parents' school involvement reports a positive relationship with the children's progress under the following conditions:

- The parents are given specific tasks to do with the children. For example, they receive materials and directions for helping children at home (Corno, 1978).
- In programs where the parents receive training from school personnel to help their children, as well as receiving materials, the children made progress (Gordon, 1969).

Administration policy can guide teachers to elicit positive, active parents' support for their child's education. If teachers can use the parents to help children learn, it could lighten the teacher's load. It is important that parents and teachers feel that they are striving together toward a common goal: to help the student learn necessary skills.

Intrusions

Research indicates that classrooms having more intrusions from the outside (i.e., announcements on the intercom, requests for students or passing out school papers) have students who make less gain in basic reading skills (Stallings, et al., 1978b). Other school personnel (counselors, school paper editors, drama coaches, physical education coaches, music directors, detention officers) may not appreciate how difficult it is to get a classroom of low ability reading students on-task and productive, and how easy it is for them to get off-task. When interruptions are allowed during class time, it implies to the student that what is occurring in the classroom lacks value.

School administrators can establish clear guidelines about the sacrosanct nature of classroom teaching: i.e., if we are serious about teaching basic skills, no one disturbs a teacher when class is in session. An administration procedure might be to allow 10 minutes for announcements at the beginning of the day rather than to take 10 minutes for announcements from any one period.

Student Information

Although teachers need information about students' reading problems and their reading level at the time classes are assigned, most teachers surveyed do not have student information easily available. Teachers feel that their ability to select materials based upon student needs would be increased if at least the reading levels of students were printed on the class lists.

To get the reading scores, teachers must go through the counselors' files and record the data available for each of the 100-150 students in their classes. This requires 5-10 minutes per student. After searching for the records, they may find test information is not available for many students. The testing program is particularly lax in many secondary schools. Often the test data are several years old and transfer students may not have any records available until the middle or the end of the semester.

In the past, there has been a trend not to make test scores available to teachers, believing this information might prejudice teachers' attitudes toward students. However true this might be for other subject areas, it should not apply to the teaching of basic reading skills. Here the teachers need all the information they can get. While reading grade level is not sufficient information, it will help in understanding the range of student abilities. More student information is needed as secondary students who have a history of failure in reading are likely to have some perceptual, physical or emotional problems in addition to problems of encoding, decoding and comprehension. There are some group tests developed by the Cincinnati schools that contribute this type of student information.

Reading teachers make a strong case for receiving inservice workshops on how to diagnose reading problems and prescribe corrective treatment. Workshops on how to use these kinds of materials should be conducted in the summer so that teachers can diagnose the problems of their students during the first week of school. One superintendent is considering having students start school several days after the teachers start in the fall. The students who need remediation would be scheduled for diagnostic testing during the first few days and the teachers could select an appropriate program before school starts.

Reading in the Content Area

Teachers who must try to teach reading in the content area need textbooks that provide similar information at different reading levels.

Most often such materials are not available. In that case the teacher has several options:

- Teachers may attempt to write their own materials for the students with low reading ability. Several teachers could share this responsibility.
- Teachers may try to locate audio tapes of the textbook (some education departments produce some of these for use with the blind).
- Students with low reading ability could be tested orally to see what they have learned from discussions.
- Teachers may fail to deal with the problem, in which case students with low reading ability will fail.

In any case, the administrative staff needs to discuss the problem with the teaching staff to make clear their policy regarding reading in the content area. If the problem is not dealt with, many students who are bright but have low reading ability may be penalized unfairly and not receive the information in social studies, science and math that is necessary to cope in our society.

Summary

The research in Phase I and Phase II has identified specific teaching methods and classroom environments that are effective in helping low level reading students achieve gains. The study design and methodology has substantiated that inservice workshops are effective means of teaching teachers to change their classroom management strategies in ways that facilitate student learning.

Phase III

FINAL REPORT

XI PHASE III BACKGROUND

A three-phase study of the teaching of basic reading skills at the secondary level was funded by the National Institute of Education beginning in 1976. The purpose of Phase III was to provide school districts with a means of disseminating the teacher training program developed in Phase II.

Phase I

Forty-three teachers and 905 students took part in Phase I of the study. Data were collected in Spring 1977 using the following instruments: SRI Secondary Observation Instrument, Classroom Environment Scale, Student Rating of Instructors, Teacher Questionnaire, and the Comprehensive Test of Basic Skills (CTBS). Student absence data were collected from the classroom teachers.

Partial correlation and regression analyses identified several teaching process variables that were significantly related to student outcome. Findings from this study suggest that for greater efficiency in teaching basic reading skills at the secondary level, classrooms should be made up of students with similar reading abilities. Students in heterogeneously grouped classrooms had more student misbehavior and consequently were off task more frequently.

In classrooms where students and teachers spent more time on reading tasks, the reading gain was greater. Typically, in these classrooms the students and teachers engaged in more frequent verbal interactions regarding reading tasks. In contrast, reading gains were smaller in classrooms with higher frequencies of social interactions and misbehavior. High scores on these variables indicate that the students and teachers were frequently distracted from reading tasks.

A positive relationship was found between achievement and feedback given to students. The most effective feedback was acknowledgement or praise for correct responses and probing questions when the answer was incorrect. Students were absent less often in classrooms where the environment was positive and supportive, where the rules were clear, and where they felt some friendship with the other students.

Because the level of student reading ability differed so widely on pretests, an analysis was conducted to see if subgroups of classrooms could be identified on the basis of similarity in pretest, posttest, and gain scores. A scattergram using classroom pretest and posttest scores identified five subgroups: low pretest/high gain; moderate pretest/moderate gain; high pretest/moderate gain; no gain; slight gain; and one case study of a classroom that gained more than 200 standard score points.

Analyses of variance were conducted that contrasted the three gain groups with the no-gain group. We concluded that teachers who have students who enter class with low pretest scores should arrange small groups where students read aloud. They should quiz the students frequently to assess their progress and should arrange their classroom management tasks so that they stay involved with the students throughout the class period.

Teachers who have students who enter class with moderate pretest scores should use a direct teaching method in which they present reading skill information. They should question specific students, get a response, and provide feedback. Positive feedback, i.e., praise, acknowledgement, probes, and guides, are more efficient than negative feedback. Teachers should stay involved with the students during the entire period.

Teachers who have students who enter class with higher scores can use other subject matter as a vehicle for reading. The students can do more work on their own, and teachers can afford to spend more time on management tasks than can teachers of students in the other two groups.

Phase II

In Phase II, conclusions of the Phase I study were organized and presented in five teacher workshops. The total sample size was 45 teachers. One-half of the teachers were trained in the workshops in Fall 1977; the remainder served as controls and were trained in late spring. Groups at each location were organized so that no group included more than six teacher trainees.

The first of the workshops explained the overall study findings and the findings for subgroups. Each teacher was given his or her profile of the significant variables. The profile was based upon the observation data collected in the classroom.* Recommendations were made for each teacher individually to increase or decrease certain behaviors. The second workshop dealt with controlling misbehavior in the classroom. The third workshop offered suggestions for managing the class and organizing reading groups. The overall focus of the workshops was how to help teachers make the most of every moment that the students have in class. The fourth workshop provided instruction for using direct reading methods, i.e., how to present new information, ask questions, and provide supportive feedback that is equally and appropriately distributed among the students. During the fifth workshop, teachers were given their second profile and individual feedback on behavior changes they had made.

For all workshop sessions, the SRI leaders made an effort to create an atmosphere that fostered uninhibited participation by the teachers. The Phase II workshops were well attended, and the teachers expressed appreciation for the opportunity to discuss their problems freely and to receive specific suggestions for methods to improve their effectiveness in the classroom.

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*Section VI of the Phase II report discusses teacher profiles in detail, and shows a sample profile.

Phase III

Analysis of Phase II data indicated that the teachers who had received the training had changed their behavior in many of the ways recommended and their students had gained more than the comparison groups. Many teachers strongly recommended that their district provide the SRI training for other teachers. Several teachers report that the management skills they learned were useful in other classes that they taught in addition to the reading classes. In response to the teachers' recommendations, Fresno Unified School District and Monterey Peninsula Unified School District requested that SRI conduct workshops for thirty or more teachers. A third district not in the previous studies also requested workshops for their teachers.

Since a workshop leader can only work with six teachers at a time, the SRI staff was not large enough to conduct this many workshops. In addition, the cost would have been prohibitive for the districts. However, we proposed training teachers who had participated in previous workshops to conduct workshops for other teachers. If teacher-led workshops proved successful, school districts would have an inexpensive means to carry on the SRI inservice training program.

The following chapters describe the study design, the training effort, and the results.

XII PHASE III STUDY DESIGN

The purpose of Phase III was to develop a cadre of teachers who could train other teachers in classroom management techniques that were found to be effective in Phases I and II. The primary questions for Phase III were: Can teachers train other teachers to change classroom behaviors in recommended ways? If changes in behavior occur, will the changes be similar to those brought about by the SRI trainer? A further question is: If teachers receive only the workshop materials, will they also be able to change behavior in ways recommended by their profiles?

The plan was to select a sample of treatment and control teachers in several districts who would be observed in the fall, prior to inservice workshops, and observed again at the end of the fall semester. The implementation of the SRI program would be evaluated for each group of teachers by comparing the implementation scores of each group with the grand means from Phase II.

Sample

The sample for Phase III was comprised of 18 teachers in the treatment group with teacher leaders, 18 teachers in a control group with SRI leaders, and 6 teachers in a control group that received workshop materials only (see Table 26).

Three districts that had SRI trained teachers available from Phase II were selected for the treatment group. The treatment districts represented three configurations of teacher leaders and relationships to the trainees. In Fresno the two teacher leaders and the trainees were all in the same school. In Monterey the two teacher leaders were located in schools other than those of the trainees. In Milpitas the teachers were trained by two teacher leaders from San Jose.

Table 26

BASIC ELEMENTS OF THE STUDY DESIGN

Districts	Trainers	Trainees	Number of Schools
Treatment (N=18)			
Fresno	2 teacher leaders	6 teachers	1
Monterey	2 teacher leaders	6 teachers	4
Milpitas II	2 teacher leaders	6 teachers	4
Control (N=18)			
Lompoc	SRI Leader	6 teachers	3
Downey	SRI Leader	6 teachers	6
Milpitas I	SRI Leader	6 teachers	2
Control (N=6)			
Gilroy	Workshop materials only	5 teachers	2

Twelve teachers in the Milpitas site had asked to participate in the study. To accommodate the large number, six of the teachers were in the treatment group and six of them were in the control group. The teachers were placed in these groups on the basis of their school so that teachers in the same school were in the same group.

The control group included one metropolitan district in the Los Angeles area (Downey), one in a small city in rural California (Lompoc), and one in the metropolitan San Francisco Bay Area (Milpitas). None of the control sites had previous experience with the SRI training program.

To examine the question of how effective the workshop materials only might be, a district in the south San Francisco Bay Area (Gilroy) was selected for study.

Selecting Districts and Teachers

Each district participating in the study had contacted SRI to request the inservice training program. The contact person in each district arranged a meeting where an SRI staff person described the study to teachers and invited them to participate. In two districts, all teachers were volunteers; in three districts, administrators highly recommended teachers attend; in one district, the administrator mandated the teachers attend. The effects of voluntary and mandated participation can be explored by examining attendance rates and behavior changes.

Selecting Teacher Leaders

Two teachers who had completed all the training sessions in Phase II were selected for each of the three treatment sites. The teachers were selected on the basis of their demonstrated ability to use the instruction processes being advocated in the SRI training program.

Instruments

The same observation system used in Phases I and II was used in Phase III.* New observers were given the 7-day training session described in Phase II. Observers in the treatment districts were given a 2-day refresher course to test their reliability.

Data Collection

Data collection periods for Phase III occurred in the fall and winter. Both of these periods consisted of 3 days of observations in each classroom and completion of the Teacher Questionnaire.

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*See Appendix A for a detailed description of this system.

Early in the fall of 1978, participating teachers were asked to identify one of their classes that they wished to have observed. We asked them to select one of their low achieving classes. Observations were conducted as close together as possible. Classroom observations began October 3 and required 3 weeks to complete.

In four of the seven participating sites, the district contact person selected someone from their district to be trained as a classroom observer. The other three sites preferred to have SRI provide a person to conduct the observations. In Monterey and Gilroy, the same observer was able to conduct the observations. Table 27 shows who selected the observers and their prior responsibility in the district.

Table 27

SELECTION AND DESCRIPTION OF OBSERVERS

Site	Selected by	Description
Downing	District	District personnel
Fresno	SRI	Substitute teacher
Gilroy	SRI	Substitute teacher
Lompoc	District	District personnel
Milpitas I	District	District personnel
Milpitas II	District	District personnel
Monterey	SRI	Substitute teacher

To complete the observations as quickly as possible, the observer in Gilroy and Monterey was assisted by an SRI staff member who conducted observations in four classrooms.

A 7-day observation training session was conducted in late September. At the end of the 7 days, all observers were required to display an 80% accuracy on all observation codes. All trainees were able to achieve this level of competency.

In the fall, before the first workshop, teachers were asked to complete the Teacher Questionnaire. A copy of this questionnaire is included in Appendix A. This questionnaire requests information about the teacher's attitude toward classroom structure and motivation.

Because in Phase II certain demographic characteristics were related to students' gain in reading, similar information was collected in Phase III. In the fall, teachers completed the Classroom Information Sheet (see Appendix A) which requests information about the class size, the teacher's training, number of aides and room assignments.

The winter data collection was conducted similarly to the fall data collection. The same observers conducted the observations, therefore, only a 3-day refresher training was required for observers to display the required 80% reliability. The training session was held from January 3 through January 5. Observations were scheduled after the last workshop from January 8 through 26. As in the fall, each teacher was observed for 3 consecutive days.

To determine if teachers changed in their attitudes regarding classroom structure, teachers again completed the Teacher Questionnaire.

Workshops for Teacher Leaders

The six teachers selected as teacher leaders were invited to SRI for an all-day training session. They had received a packet of materials to review and had been asked to carefully critique the training they had received in Phase II. Teachers made very specific recommendations, resulting in many clarifying changes in the training materials. After the critique and discussion, we proposed an agenda to be used for Workshop I (Exhibit I). Workshop materials and video tapes were sent to each teacher leader group.

Workshops for Teacher Schedules and Attendance

The Phase III workshops followed the same format and content as those conducted for Phase II.*

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*See Section VI of the Phase II report for a detailed description.

EXHIBIT 1

AGENDA

WORKSHOP 1 - OVERVIEW

1. Introduction

After introducing yourself to the group, please welcome everyone to the study and tell them a bit of your involvement. To help the teachers get to know each other, have them choose a partner that they do not know, and become acquainted with that person. Then have them introduce their partner to the rest of the group. By way of introduction, encourage them to identify the school in which they work, grades in which they teach reading, the reading ability of the students in the class that was observed, any aides or special reading programs, and if the teachers have a permanent classroom, or if they rotate classrooms.

2. Introduction to Study

Review the "Description of the Study."

Describe the focus of this present year of the study. Explain and discuss the fact that SRI received numerous requests from school districts requesting participation in our program. Because of SRI's limited staff, we are focusing this present study on the development of an ongoing process whereby school districts might conduct their own classroom observation and workshops for teachers on a continuing basis.

3. Discuss Teachers' Expectation of the Workshops

We hope to find out from each teacher what they hope to gain on a personal basis from the workshops. This is a good time to discuss your experiences in the workshops of Phase II.

EXHIBIT 1 (concluded)

4. References to Table 8 of Workshop Packet 1 and Profiles

Explain Table 8 and the fact that all interpretations are dependent upon the reading level of the students in their class. Take time to answer any questions presented by the group.

Each trainer will work with three teachers to review profiles on an individual basis, making any recommendations at this time. Please ask the trainers to document these recommendations on the form provided. Teachers will be asked to record these same recommendations on their own individual forms as well.

5. Student Rating Scale of Instructors

Discuss the rating scale and describe the findings. Ask teachers if they would please have the students in the observed classes complete this rating scale. Tell the students to be as honest as possible in their ratings, because this research can help teachers learn how to be more effective teachers. To prevent the students from feeling threatened by the scale, we ask that they do not place their names on the form. Request that one student collect the forms and enclose them in the SRI envelope that will be provided.

Approximately 10-12 minutes are required to complete this form. In most classes, it will be necessary for the teacher to read the items to the class. (It is not meant to be a reading test.)

6. Teacher Questionnaire

Have teachers complete the teacher questionnaire and return to you before leaving.

7. Distribution of Home Packet 2

Ask teachers to read over this Home Packet 2 in preparation for the next workshop. Encourage everyone to try the recommendations made at this session and explain that next week we will have a chance to discuss the success and failure of the methods they try.

All workshops were conducted on a weekly basis. Because of teacher schedules, two of the districts began their workshops a week later than the other districts. In one district, a teacher strike delayed the third workshop until two weeks after its originally scheduled date. However, all four fall workshops at the six participating districts were completed between November 6 and December 13, 1978. The fifth workshop was conducted in Jnauary, 1979.

At five of the districts, the workshops were scheduled after normal school hours, from 3:30 to 6:00. In one district, teachers were given release time from 1:00 to 3:30.

Attendance at the workshops was excellent. Of the 33 teachers attending all the workshops, three missed one workshop. No teacher missed more than one workshop.

Monitoring Teacher Leaders

The workshops conducted by teacher leaders were monitored through audio tapes sent to SRI. A staff person listened to the tapes and spoke by phone to the teacher leaders to provide recommendations and supportive feedback. We attempted to provide a supportive relationship to the teacher leaders--just as we encouraged them to provide a supportive environment for the teacher trainees. As was emphasized in the Phase II report, teachers are encouraged to provide support and feedback to students. The theory here is that people are more likely to try new behaviors when they feel supported and not threatened. If the new behaviors lead to growth and a more pleasant situation, the risk in trying something different will have been worth taking and the new behavior is likely to be maintained.

The teacher leaders returned to SRI in March for a 1-day debriefing after the fifth workshop. Again they provided us with many practical suggestions for future workshops that might involve teacher leaders.

Materials Only/Gilroy

An SRI staff member presented an orientation meeting to reading teachers from two schools in the district that participated at the materials only level. The SRI staff member explained the study and described what the teachers' level of participation would be. Six teachers volunteered to participate.

Three days of observation were conducted in each teacher's classroom and individual profiles were generated from the observation data. The design of the study was to mail all of the materials directly to the teachers without contact with SRI. Because of the complexity of interpreting the profiles, special materials were developed to describe the profile format and the sequence of procedures to follow in order to constructively interpret each profile. These materials were mailed to the teachers along with the standard materials for the first workshop. A letter was enclosed that encouraged teachers to phone SRI if they had any questions about the interpretation of their profile. Three of the six teachers contacted SRI for clarification.

Materials for the three subsequent workshops were mailed to the teachers and no subsequent contact with SRI occurred. Winter observations were conducted in these teachers' classrooms and the profiles from these observations were also mailed to them.

Minimum contact with the teachers was not an effective procedure. Teachers did not return questionnaires mailed to them, nor did they return follow-up phone calls. It appears that they did not feel as if they were legitimate participants in the study.

In order to create a feeling of participation for teachers receiving materials only, we would make the following procedural changes for future studies:

1. Conduct a meeting with the teachers to explain how to interpret the profiles. It appears that the complexity of this procedure can not be effectively explained with written instructions.

2. Because of this meeting, perhaps the teachers would develop increased interest in the study, and would identify ways in which the recommendations for specific classroom behaviors might benefit them.
3. Develop additional communication procedures. Letters and phone calls to the teachers might help them to feel that they are an integral part of the study.

Anomalies in the Data

In any field-based research, unforeseen situations may arise which were not in the original design of the study. Three situations were present in Phase III which warrant reporting. They are: a teachers' strike, teachers' withdrawal from the study and an exemplar reading program.

Teachers' Strike

Two days before the third teacher workshop was scheduled, teachers in the Fresno district voted to go out on strike. One of their primary issues was determination of class size. At that time district policy required the teacher-student ratio to be determined by computing all student enrollment with all adults employed in the school, including administrators, counselors, and custodians. The teachers in Fresno requested that a maximum class size be mandated rather than this artificial determination of class size.

During a teachers' strike, a great deal of emotional conflict may arise. As a rule the difficult decision to strike is made after many attempts at negotiations; the teachers feel that drastic steps must be taken to try to improve their working conditions and the education of their students. Such decisions are rarely unanimous. Those teachers who choose to cross the picket lines also have reasons and beliefs they adhere to. They often feel that the students ultimately suffer too much from a strike due to the loss in instruction time.

Four of the six teachers attending our workshops chose to respect the picket line and not to enter their classrooms. The two other teachers conducted their classes during the strike. At the onset of the strike, both of the teacher-workshop leaders were on strike. However, during the strike, one of the teachers chose to cross the picket line and enter the classroom.

Because of the 2-week strike, the third workshop was not conducted on schedule. The teachers who were striking did not communicate with the teachers who chose not to strike. Therefore, the two teacher leaders did not communicate after one of them had crossed the picket line. SRI staff served as an intermediary during this time and attempted to maintain communication and interest in the workshops. When the strike ended, the teachers in Fresno displayed a great deal of professionalism and chose to continue the workshops regardless of any personal conflicts that might have been created by the strike. They informed SRI that this decision was based on their belief in the benefit of the workshops and that possibly attendance at the workshop might help to bring the teachers together again. The third workshop was delayed for two weeks, but both the third and fourth workshops were conducted before the Christmas holiday.

Teachers' Withdrawal from the Study

Four teachers who had originally volunteered to participate in the workshops chose to withdraw from the study. Two of these four teachers left the teaching profession for higher paying positions in the private sector. The other two teachers left the study afer the initial observation and presentation of their profile. They did not feel the workshops would be of any benefit to them. Both these teachers conducted their reading classes almost entirely by instructing one student at a time. Students in their classes received their assignments from individual folders and worked alone throughout the period as the teacher monitored the class, working with individual students. Our research indicates that this technique is not effective for teaching reading to low-achieving students. We encourage group instruction so that students can learn from auditory and visual experiences in the group. This is stated very precisely in the first workshop, and probably the teachers who did not continue felt an incompatibility with our recommended approach.

Exemplar Program

The district which volunteered for the materials-only aspect of the study had implemented a highly organized, structured program in the reading classrooms of the two schools that were observed. This program was originally developed in Salt Lake City, Utah for the National Diffusion Network. Etha Reid, who had developed this program, trained the teachers. The teaching process involved a great deal of group instruction, trained aides, reading aloud activities, the use of flashcards, and repetition.

Teachers are permitted to use any materials they choose provided they are prescribed at the students' reading level. However, with this freedom of use of materials a specified sequence of instruction is to be followed. When a new story is assigned to students, the teacher is to develop a vocabulary list from the passages, and to drill students on these words. Students are then to participate in reinforcing exercises on the story content. Regular criterion tests are to be administered to students to evaluate their achievement before continuing to a higher level.

Clearly, this was an unfortunate choice of sites to study the use of SRI materials only, since these teaching processes are the same as those emphasized in the SRI workshops. We did not know this program was being used until our observations were conducted. Given that many of the processes were already being implemented at this site, no statements can be made about the effectiveness of using the SRI materials only.

Comparison of Phase II and Phase III Demographic Data

How demographic features impacted on student achievement are discussed in the student outcome section of the Phase II final report. Since we do not have student outcome data for Phase III, we conjecture that relationships similar to those found in Phase II process/outcome partial correlations would be found in Phase III--given similar circumstances.* Therefore we think it is of interest to compare the teacher characteristics and classroom environments of Phases II and III.

The characteristics of teachers in Phases II and III are very similar. A similar percentage had reading credentials and a similar percentage had attended some workshop or taken some college course in reading (see Table 28). However, fewer teachers in Phase III had received no training whatsoever in teaching reading. Of those with no training, 75% were in the treatment group. This fact must be kept in mind when the implementation is interpreted. We did find a relationship in Phase II between reading credentials and student gain.

The classroom environment appears to be different for Phases II and III. More teachers had permanent classrooms and fewer teachers had to move from room to room in Phase III. Also, fewer Phase III teachers had an aide present. However, the average class sizes are similar for the two phases as are the ranges in class size.

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*Phase I had observation process data collected in the spring only, but the process/outcome data of Phases I and II are very similar and it is reasonable to assume similar relationships in Phase III if such analyses were carried out.

Table 28

SUMMARY OF TEACHER CHARACTERISTICS AND CLASSROOM ENVIRONMENT

	Percentage of Teachers	
Characteristics	Phase II (N = 47)	Phase III (N = 32)*
Reading credential	21.3%	22.6%
Attend workshops or have taken some college courses on reading	51.1	47.0
No formal training to teach reading	34.0	17.0
Elementary credential	19.1	34.0
Teach other subjects	72.3	66.0
Permanent classroom	72.0	83.0
Aides present	57.4	25.8

	$\bar{X}$	Range	$\bar{X}$	Range
Total years teaching	13.0	1-31 years	11.5	2-25 years
Years teaching reading	5.2	1-12 years	6.2	0-18 years
Class size	20	7-13 students	20	7-35 students

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*Two teachers did not complete questionnaires.

XIII PHASE III ANALYSIS AND FINDINGS

To study the question of whether or not teachers can train other teachers to change behaviors in recommended ways we computed an implementation score for each teacher on 26 process variables. Mean scores on each variable were also computed for the treatment and control groups.

The grand mean was derived from 46 classrooms observed in spring Phase I and 45 classrooms in spring Phase II (See Appendix E for grand means). These spring means reflect the frequency or percentage of behaviors occurring in classrooms as they were correlated with student gain in Phases I and II. The recommendation to teachers in all groups was to increase or decrease a particular behavior so that it was above or below the grand mean depending on whether the variable was positiviely or negatively correlated with gain. If the teachers were already performing the activity in an effective manner, the recommendation was to continue the activity as they were doing. (See Appendix F for winter means.)

Based on the winter observation data, each teacher in the study was given a + or 0 for each variable depending on whether they were performing above or below the grand mean as recommended. The implementation score was derived by giving one point for each + (indicating that the recommended procedure was being followed). For example, if the grand mean for students uninvolved was 11%, we recommended that this teacher have this occur less often than that. If the grand mean for praise and support was a frequency of 13 interactions in a class period we recommended that teachers have that activity occur more often than 13 times. If all variables were implemented as suggested, the score would be 26. (The scores for each teacher and total scores for the treatment and control groups on each variable are available from SRI.)

The following pages will describe and compare:

- The implementation scores of treatment and control groups overall
- The implementation scores of treatment and control groups by districts
- The implementation scores of teachers within districts variables that were most difficult or easy to implement

Implementation Score of Treatment and Control Groups Overall

The purpose of the Phase III study was to see whether teacher-led inservice training workshops would change teaching behavior as much as would SRI staff-led workshops. In addition we wanted to see whether a third group of teachers might change teaching behavior by using our workshop materials only.

We have used two procedures to analyze these data. First, we have looked at the winter data to see how many teachers in each group were performing above or below the grand mean as recommended on 26 variables at the end of the experiment. Table 29 shows the average number of variables being implemented and the range for each group.

Table 29

AVERAGE IMPLEMENTATION OF PROCESS VARIABLES
BY TREATMENT AND CONTROL GROUPS

	Variables Implemented	
Group	$\bar{X}$	Range
Treatment (N=16)	17.0	12-23
Control (N=17)	17.2	11-25
Materials Only (N=5)	17.6	15-21

There is not a statistical difference in the means of the three groups at the end of the first semester. The slightly higher score of the materials only group prompted us to look closely at the program being used prior to the SRI study to see whether we could credit any of their success to our SRI workshop materials.

The second procedure was to examine pretest observations collected in September prior to the workshop interventions indicated that the materials-only group was already implementing 13 out of 16 summary variables[*] (see Table 30). In the winter observation 14 out of the 16 variables were being implemented as recommended. Thus, we cannot claim that improvement occurred as a result of using the SRI materials.

The reading program the materials only group of teachers were using is very structured and prescribes how the teachers should interact with students. This program is described in detail in the previous section of this report. The SRI variables that were not implemented related to control of student social comments (F56, F96) and more instruction to groups (S120). This district was an unfortunate choice for a comparison to see whether the SRI workshop materials might have an effect since the materials being used prior to our study were similar in intent toward organizing the classroom and for analyzing instructional interactions.

In the fall prior to the workshops, the 16 teachers in the treatment group were on the average implementing 11 out of 16 of the summary variables. As shown in Table 30, by the winter observation they had increased the number of questions and responses (F17, F25) regarding reading from a low of 61 up to the mean of 76, but it was not above the mean as recommended. Social interactions and students uninvolved (S12, S13) did stay below the mean. The teachers worked a little less often with individuals (S119) and a little more often with groups (S120). Overall the number of variables that were implemented increased by one as the pattern changed.

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[*] To make summarizing easier, eight variables were combined and six variables of lesser importance were dropped because of low frequency.

Table 30

COMPARISON OF TREATMENT AND CONTROL GROUP MEANS ON FALL/WINTER PROCESS VARIABLES

Variable Number/Name	Grand Mean	Teacher-Led Workshops						SRI-Led Workshops						Materials Only					
		Fall			Winter			Fall			Winter			Fall			Winter		
		$\bar{X}$	*	S.D.	$\bar{X}$	*	S.D.	$\bar{X}$	*	S.D.	$\bar{X}$	*	S.D.	$\bar{X}$	*	S.D.	$\bar{X}$	*	S.D.
Interactive Instruction																			
F17 Teacher questions F25 Student responses	76.8	61.5	0	-	76.1	0	-	73.3	0	-	83.3	+	-	105.5	+	-	93.7	+	-
F71 Teacher praise/support	12.8	17.1	+	10.1	17.1	+	7.1	13.6	+	8.2	18.4	+	10.0	16.7	+	5.9	29.8	+	2.6
F76 Corrective Feedback	12.0	14.0	+	9.3	15.1	+	9.8	8.6	0	7.1	9.6	0	5.1	16.6	+	15.1	24.6	+	16.4
F136 Adult begins interaction with different student	22.0	33.2	+	11.9	24.9	+	10.3	26.4	0	10.6	29.5	+	8.5	25.8	+	5.9	22.7	+	17.4
F43 Student reading aloud	17.1	21.4	+	29.7	35.6	+	29.5	15.2	0	22.7	23.6	+	26.3	17.7	+	24.6	15.7	0	25.3
S4 Reading aloud activity	5.7	18.5	0	20.4	6.5	+	7.2	14.6	+	17.9	11.3	+	14.1	20.9	+	19.0	6.0	+	11.2
F94 All interactive reading	192.0	245.0	+	48.0	252.5	+	44.7	235.5	+	43.0	256.8	+	47.4	255.2	+	48.0	282.7	+	27.9
Non-interactive Instruction																			
S2 Teacher without students; classroom management	25.0	16.9	+	10.0	13.8	+	8.2	24.6	+	20.0	20.4	+	17.6	10.0	+	3.7	8.0	+	11.0
F122 Teacher without students	41.0	24.0	+	10.3	26.7	+	22.2	44.5	0	41.6	39.2	+	46.7	26.9	+	18.7	21.8	+	24.5
S3 Silent reading	13.8	8.8	+	15.6	11.8	+	11.2	3.4	+	4.8	7.1	+	7.9	4.9	+	5.8	8.0	+	12.9
S9 Written assignment	21.0	10.5	+	14.9	22.7	0	12.3	18.1	+	20.7	33.4	0	18.8	9.6	+	15.7	20.4	+	19.2
Off-task Interactions																			
F56 Social Comments F96 Behavior	6.7	13.9	0	-	9.7	0	-	10.8	0	-	8.0	0	-	19.3	0	-	7.1	0	-
S12 Social interaction S13 Student uninvolved	11.1	7.5	+	-	9.4	+	-	10.0	+	-	10.8	+	-	18.4	0	-	10.7	+	-
Organization and Grouping																			
F120 All interaction; class assignment	66.7	61.9	+	23.2	63.0	+	25.9	81.3	0	55.3	79.6	0	53.3	52.5	+	27.7	57.5	+	35.2
S119 Teacher - single student	9.2	9.8	0	7.5	8.9	+	10.4	7.6	+	9.4	20.0	0	18.3	25.4	0	21.0	5.3	+	3.5
S120 Teacher - Groups	4.9	3.8	0	6.5	5.3	+	6.7	4.6	0	6.4	12.6	+	12.4	11.2	+	11.9	1.7	0	2.7

* + = Teachers performed as recommended in relationship to grand mean.
0 = Teacher did not perform as recommended.

The 17 control teachers in the SRI-led workshops were on the average implementing only 8 of the 16 summary variables when they were observed in the fall. By the winter observation they were implementing 11 of the variables. These teachers increased the amount of questioning, and students' responding (F17, F25), and giving support or praise (F71) although they also increased working with groups (S120) and decreased the amount of time they spent without students (S2, F122).

The standard deviations within each group of teachers are substantial so that the following questions become of interest: Were some sites better implemented than others? Were demographic characteristics within a site related to high or low implementation by teachers? The following section will examine these relationships.

Implementation Scores of Treatment and Control Groups by Districts

Mean implementation scores were computed for each district based upon the winter observations of teachers within the district. Each teacher was given a point for each of the 26 process variables for which they were above or below the grand mean as recommended. If all variables were implemented, the score would be 26.

The sites varied within the treatment and control groups as shown in Table 31.

The districts within the treatment group implemented the program at about the same level. Monterey, with the highest score, also had the greatest range in scores. The control group had the best implemented district in the study (Downey) and the least well implemented district (Milpitas II). The materials-only group was implemented about average for the districts. The range in teachers' scores is the least for all groups in the study in the materials only group.

Implementation Scores of Teachers Within Districts

The range of teachers' implementation scores within districts is of considerable interest. There is a low score of 8 and a high score of 21 within one site. To see whether there are some demographic

Table 31

AVERAGE IMPLEMENTATION OF PROCESS VARIABLES BY SITE

Group	Variables Implemented $\bar{X}$	Variables Implemented Range
Treatment		
Milpitas I (N=5)	16.2	13-20
Monterey (N=5)	18.4	11-22
Fresno (N=6)	16.5	14-21
Control		
Downey (N=6)	19.3	16-25
Lompoc (N=6)	16.8	8-21
Milpitas II (N=5)	15.4	11-19
Materials Only		
Gilroy (N=5)	17.6	15-21
All Districts $\bar{X}$	17.2	8-25

characteristics that interact with implementation we conducted a descriptive analysis using data displayed on Tables 32 and 33.

Treatment Groups

The treatment groups had very similar implementation scores in all three districts; however, the range of teachers' scores within districts is of interest. Table 32 presents comparisons of teachers on the basis of class size, aides, training, other subjects taught, and years of experience; as well as implementation scores for four sets of variables: interactive instruction (10 variables), non-interactive instruction (4 variables), off task (4 variables), and organization and grouping (8 variables).

Table 32

TREATMENT TEACHER IMPLEMENTATION SCORES AND DEMOGRAPHICS

District and Teacher (Code)	Interactive Instruction	Non-Interactive Instruction	Off-Task Activities	Organization and Grouping	Total Implementation Score	Class Size	Aides	Education to Teach Reading *	Years of Teaching Experience	Teaching Other Classes Besides Reading	Own Room	Type of Reading
Milpitas I												
2611	6	3	0	4	13	15	0	0	10	English	Yes	Remedial
2621	8	3	3	3	17	26	0	3,5	8	Math	Yes	Remedial
2631	7	3	3	5	18	22	0	2,3	24	Art	Yes	Remedial
2632	3	3	3	4	13	19	0	2	16	None	Yes	Remedial
2641	10	3	4	3	20	21	0	5	18	English	Yes	Content
Monterey												
2711	4	2	2	3	11	10	1	0	22	Vocal	Yes	Content
2721	9	2	3	7	21	10	0	2	5	None	Yes	Remedial
2731	7	3	2	5	17	10	0	2	3	History	Yes	Remedial
2751	7	3	4	8	22	25	1	3,5	6	None	Yes	Lab
2752	8	3	3	7	21	30	1	5	9	None	Yes	Remedial
Fresno												
2211	8	1	3	2	14	29	1	5	20	Biology	Yes	Content
2212	5	4	2	3	14	30	0	5	13	Home Ec	No	Content
2213	6	3	1	2	12	20	2	5	4	None	No	Lab
2214	8	3	4	3	18	31	0	3,5	6	German	Yes	Remedial
2215	5	4	4	5	18	33	2	0	10	Biology	Yes	Content.
2216	10	4	4	3	21	35	1	0	10	English	Yes	Remedial

*
0 = No training to teach reading
1 = Masters Degree to teach reading
2 = Reading Credential
3 = Elementary Credential
4 = Special Education Credential
5 = Workshops or courses to teach reading

Milpitas

In Milpitas the five teacher implementation scores on 26 variables ranged from 13 to 20 in the winter observation. The teachers with the lowest implementation scores spent more time with individual students and more time alone. These teachers also spent less time questioning and providing feedback than did other teachers. The size of their classes were smaller than the others. One of these teachers had a reading credential and may have felt committed to working with one student at a time regardless of the instruction and recommendations he or she received in the SRI training sessions.

The teacher with the highest implementation score in Milpitas had 21 students and had only attended some workshops on teaching reading or had taken a college course on teaching reading. This teacher had 18 years of experience teaching English.

Monterey

In Monterey the five teachers' scores ranged from 11 to 22 on implementation. The teacher with the lowest score reported having no training to teach reading. This teacher's specialty is in teaching music and the reading class was held in the music room. It is not surprising that the teacher reported difficulty in getting and keeping the students' attention when they were in the midst of percussion instruments. The teacher with the highest score had 25 students in a reading lab. This teacher had an elementary credential and had received some training to teach reading in workshops or in a college course. Though trained to teach social studies in secondary schools, this teacher only teaches reading classes at this time.

Fresno

The range of implementation scores in Fresno was from 12-21. The teacher with the lowest score had the fewest number of students (20) and two aides in a reading lab. This teacher had some training to teach reading in workshops or a college course but had only 4 years of teaching experience. This teacher did not provide as much praise, support, and corrective feedback as suggested and the students were more often assigned written work. Students were found to be uninvolved more than twice as often as the grand mean. The teacher with the highest score had 35 students with one aide. This teacher reported having had no prior training to teach reading but had 10 years of experience in teaching English.

Control Groups

As previously stated, the control group had the best implemented site as well as the least well-implemented site. The primary difference in these two locations was the class size. The Downey classes averaged 14 per class and ranged from 12-16. This was lower than for all other sites. The Milpitas II classrooms averaged 22 and ranged from 12-29. Lompoc whose implementation score was only slightly higher, had classes with an average of 20 and range of 7-30. Five of the six teachers in Downey taught no classes other than the remedial reading classes; all teachers in Milpitas and three in Lompoc taught classes other than reading. It would seem that with fewer students and by concentrating on teaching reading, teachers in Downey were more able to implement the SRI training program. How teachers within districts differ on implementation and characteristics is described on Table 33. and in the following sections.

Downey

The teacher with the highest implementation score in Downey implemented 25 out of 26 variables. This teacher had 9 years of teaching experience and was trained as a special education teacher. The teacher taught only reading and worked with 16 students. Another Downey teacher who had a special education credential had an implementation score of 19. This teacher had 12 students in the class in our study. All Downey teachers had their own rooms, and no one had classroom aides. All had

Table 33

CONTROL TEACHERS IMPLEMENTATION SCORES AND DEMOGRAPHICS

District and Teacher (Code)	Interactive Instruction	Non-Interactive Instruction	Off-Task Activities	Organization and Grouping	Total Implementation Score	Class Size	Aides	Education to Teach Reading *	Years of Teaching Experience	Teaching Other Classes Besides Reading	Own Room	Type of Reading
Downey												
1111	8	3	4	5	20	15	0	5	25	None	Yes	Lab
1121	7	1	4	4	16	15	0	3,5	6	None	Yes	Remedial
1131	8	3	4	3	18	12	0	3,5	11	None	Yes	Remedial
1141	10	3	4	8	25	16	0	4,5	9	None	Yes	Remedial
1151	9	2	2	5	18	15	0	2	10	Eng.	Yes	Lab
1161	8	3	2	6	19	12	0	3,4	14	None	Yes	Remedial
Lompoc												
1411	6	3	4	5	18	7	0	3,5	22	None	Yes	Remedial
1412	8	3	2	6	19	19	0	5	13	Drama	No	Lab
1421	8	2	4	7	21	30	0	1,2	12	None	Yes	Remedial
1422	8	3	4	5	21	24	0	1,2	12	None	Yes	Remedial
1423	1	1	4	5	11	22	0	5	14	Eng.	No	Remedial
1431	2	1	3	2	8	20	0	5	2	Art	No	Remedial
Milpitas II												
1511	5	3	1	4	13	12	0	3	7	P.E.	Yes	Lab
1512	9	1	2	4	16	27	0	5	7	Eng.	Yes	Remedial
1513	6	4	3	6	19	29	2	5	8	Eng.	Yes	Remedial
1514	6	3	3	6	18	21	0	3,5	7	Math	Yes	Remedial
1522	5	0	3	3	11	14	0	0	2	P.E.	Yes	Remedial
Materials Only												
Gilroy												
3311	8	3	4	3	18	10	0	5	17	Eng.	No	ESL
3312	6	3	3	3	15	23		5		Soc. St.		
3313	7	1	4	4	16	28						
3314	7	4	2	5	18	26						
3321	8	4	3	6	21	21	2	3,5	15	None	Yes	Remedial

*0 = No training to teach reading
1 = Masters Degree to teach reading
2 = Reading Credential
3 = Elementary Credential
4 = Special Education Credential
5 = Workshops or courses to teach reading

some training to teach reading and only one taught a subject other than reading. The variables most difficult for five out of six of these teachers were related to organizing and grouping.

Lompoc

The two teachers with the highest implementation scores in Lompoc both had 12 years of teaching experience and masters degrees in teaching reading. They had the largest classes in the Lompoc sample, and both had their own classrooms and taught only reading classes. Two teachers with low implementation scores did not have their own classrooms and taught classes other than reading. One of these two had only two years of teaching experience. Here it appears that having their own classroom, having credentials to teach reading, and only teaching reading made a difference in how teachers implemented the SRI training program in Lompoc.

Milpitas II

All of the Milpitas teachers had their own rooms. The teacher with the highest implementation score also had the most students and two classroom aides. This teacher had some training to teach reading in workshops or in college courses and also taught classes in English. The teacher with the lowest score did not implement any of the non-interactive instruction variables. This teacher had only two years experience and no prior training to teach reading. This teacher's major was physical education. Even though only 14 students were assigned to this teacher, it still was difficult for this teacher to implement the program.

Gilroy/Materials Only

All of the Gilroy teachers were using the district reading program. The teachers reflect the consistency of the training they had received prior to this study: their implementation scores were very high in the fall and varied by only six points in the winter. The teacher with the highest score had 21 students with two aides and taught only reading. This person had received training to teach reading in workshops in college courses and had been teaching 15 years. The teacher with the lowest score had a similar number of students but taught classes other than reading.

Summary

Overall we find no consistent pattern in teachers or classroom demographics that relate to implementation. Reading lab teachers or teachers with aides did not implement the program better. Teachers who did not have their own classrooms and who also taught subjects other than reading tended to have a little lower implementation scores. Teachers with high scores tended to have more years of experience teaching and more training to teach reading. We think it is safe to say from this analysis that teachers who have little teaching experience, little training to teach reading, and who must move from room to room and teach several subjects will have a difficult time implementing the SRI training program. In addition, students aren't likely to prosper as much from the classroom instruction provided by those teachers.

Variables That Were Most Difficult or Easy to Implement

To examine which variables were best implemented at the end of training, we counted how many of the teachers in the treatment and control groups (N=33) actually implemented each during the Winter Phase III observations. This summary is presented on Table 34 for all teachers who received the SRI training and for the materials-only group. We will consider 70% reasonable for implementing a variable: this means that 24 out of 33 teachers would be implementing the variable correctly. In the materials-only group three out of five was considered acceptable for implementing the variable.

Table 34

PERCENTAGE OF TEACHERS WHO IMPLEMENTED EACH VARIABLE

		Trained Treatment and Control (N=33)		Workshop Materials Only (N=5)	
Interactive Instruction					
S6,S7,S8	Instruction activities	46	0[*]	80	+[*]
F45	Instruction interactions	73	+	100	+
F17	Teacher questions	76	+	100	+
F25	Student response	88	+	80	+
F71	Praise/support	76	+	100	+
F76	Corrective feedback	40	0	60	0
F136	Teacher with different student	73	+	40	0
F43	Student reading aloud	61	0	40	0
S4	Reading aloud activities	62	0	40	0
F94	All interactions, reading	91	+	100	+
	Total above 70%		6		6
Non-Interactive Instruction					
S3	Silent reading	79	+	80	+
S9	Written assignment	34	0	60	0
F122	Teacher without students, classroom management	73	+	60	0
S2	Teacher without students	79	+	60	0
	Total above 70%		3		1
Off-Task Activities					
F56	Social comments	88	+	100	+
F96	Behavior	70	+	60	0
S12,S13	Students uninvolved in tasks	70	+	60	0
F135	Class intrusions	76	+	100	+
	Total above 70%		4		2
Organization and Grouping					
S5	Making assignments	73	+	40	0
F120	Organization	55	0	80	+
F108	Student comments; assignments	39	0	0	0
S2,S15	Total class management	61	0	80	+
F91	Movement	52	0	40	0
F48	Teacher instructs group	46	0	20	0
S119	Teacher-individual	70	+	60	0
S120	Teacher-group	52	0	80	0
	Total above 70%		2		2

---

[*] + means 70% or more teachers implemented the variable.
0 means less than 70% of the teachers implemented the variable.

Treatment and Control Groups

Of the ten interactive instruction variables, six were implemented above 70% by the trained group of teachers. Those variables that were not implemented were reading aloud (F43, S4), corrective feedback (F76), and instruction activities (S6, S7, S8). The pattern was similar for the materials-only group.

Of the four non-interactive instruction variables, three were implemented above 70% by teachers who received the SRI training program. The training here seems to have been effective. Only written assignments (S9) was not implemented; this occurred with greater frequency than we recommended in 22 classrooms. The materials-only group implemented only one of this set of variables over 70%.

All four of the off-task variables were implemented by the teachers who received training. Decreasing off-task behavior was stressed in the training program and many methods to motivate students were suggested. The materials-only group implemented two of these four variables. Their reading program does not tend to stress these particular strategies for controlling behavior and keeping students on task.

The organization and grouping variables were not well implemented by either the trained teachers or the materials-only group. The teachers in the trained group did reduce their time in making assignments (S5) and in speaking to individuals (S119). The materials-only group succeeded on two variables; they spent less time organizing (F120) and more time working with groups (S2, S15).

In summary, it seems that it was difficult to change teachers' behavior so that they would group students and have them read aloud. It was easier to have teachers increase their questioning and praise and support. They did increase their interactions with students and decreased the non-interactive instruction and off-task activities.

Good News

The good news emanating from this three-phase study is that teachers can and do make changes in organization and management style when the changes are practical and can be adapted to their own environments. The dissemination plan works: teachers can teach other teachers these classroom processes. The school system is then left with the facility to provide, at a low-cost, the SRI inservice training program.

The other good news is that students of low reading ability need not be doomed to failure. Given appropriate teaching methods they can and do make substantial gains during a school year. The important message for administrators, teachers and students is not to give up. When teachers and administrators are committed to establishing a learning environment, low ability students are more likely to become committed to their own education. Such commitment results in gains toward achieving basic skills that will allow these students to cope in society.

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Appendix A

INSTRUMENTS

SRI Secondary Observation Instrument and Training Manual
SRI Reading Comprehension Test and Directions for Administration
Classroom Environment Scale
Student Rating Scale of Instructors
Absence Rate Form
Teacher Questionnaire

SECONDARY OBSERVATION INSTRUMENT

DIRECTIONS: Make sure that all of the identifying information has been entered on the Classroom Summary Information form prior to any observation. Do not make any stray marks outside the boxes provided in places where written information is required. Make sure you code the classroom summary information form booklet Identification Number in the I.D. grid of all booklets used in the observation.

FOCUS PERSON NUMBER					
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⓪	⓪	⓪	⓪	⓪	⓪
①	①	①	①	①	①
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③	③	③	③	③	③
④	④	④	④	④	④
⑤	⑤	⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦	⑦	⑦
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GRADE LEVEL			
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④	④	④	④
⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥
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SUBJECT IDENTIFIER

- READING ○
- MATH ○
- ENGLISH ○
- SOC. SCI. ○
- SCIENCE ○
- FINE ART ○
- CAREER ED. ○
- VOC. ED. ○
- OTHER ○

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⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨

A. No. of Male students enrolled

B. No. of Female students enrolled

Teacher______________________________

School______________________________

City______________________________

Observer______________________________

⓪ ① ② ③ ④ Number of teachers that regularly work in the classroom

⓪ ① ② ③ ④ Number of aides that regularly work in the classroom

⓪ ① ② ③ ④ Number of volunteers present

⓪ ① ② ③ ④ Number of parents/visitors present

Ⓨ Ⓝ Group by ability within class

Total Class Duration

- ○ 20 minutes
- ○ 25 minutes
- ○ 30 minutes
- ○ 35 minutes
- ○ 40 minutes
- ○ 45 minutes
- ○ 50 minutes
- ○ 55 minutes
- ○ 60 minutes
- ○ 70 minutes
- ○ 80 minutes
- ○ 90 minutes
- ○ 100 minutes
- ○ 110 minutes
- ○ 120 minutes

Intran -1326B - SE712 - 54321

SRI CLASSROOM SNAPSHOT

MATERIAL → ACTIVITY ↓		01 Textbook	02 Workbook Worksheet	03 Test	04 Game/ Manipulative Material	05 Reading/ Math Kit	06 Machine Chalkboard	07 Non Curricular Reading	08 No Material
01 Reading Silently	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
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02 Reading Aloud	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
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03 Making Assignments	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
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04 Instruction	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
05 Discussion	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
06 Practice Drill	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
07 Written Assignments	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
08 Taking Test Quiz	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
09 Non-math or non-reading Instruction	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
10 Social Inter- action Ⓣ	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
Ⓐ	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
Ⓐ	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
Ⓞ	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
11 Student Univolved	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
[illegible]2 Being Disciplined	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
13 Classroom Manage- ment Ⓣ	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
Ⓐ	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
Ⓐ	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
Ⓞ	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ

For this Snapshot Only

Number of Adults in Classroom	0	1	2	3	4	5	6	7	8	9
Number of Students in Classroom	0	1	2	3	4	5	6	7	8	9
	0	1	2	3	4	5	6	7	8	9
Sequence No.	1	2	3	4	5					

FIVE MINUTE INTERACTION

Focus Person I.D.						Act. Start		Time Started Hrs.		Time Started Min.		Seq. No.
○	○	○	○	○	○	○	○					
0	0	0	0	0	0	0	0	6	1	0	0	1
1	1	1	1	1	1	1	1	7	2	1	1	2
2	2	2	2	2	2	2	2	8	3	2	2	3
3	3	3	3	3	3	3	3	9	4	3	3	4
4	4	4	4	4	4	4	4	10	5	4	4	5
5	5	5	5	5	5	5	5	11	6	5	5	
6	6	6	6	6	6	6	6	12	7		6	
7	7	7	7	7	7	7	7		8		7	
8	8	8	8	8	8	8	8				8	
9	9	9	9	9	9	9	9				9	

1	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

2	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

3	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

4	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

5	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

6	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

7	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

8	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

9	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

10	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

11	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

12	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

13	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

14	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

15	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

16	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

17	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

18	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

19	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

20	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

21	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

22	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

23	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

24	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

25	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

26	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

27	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

28	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

29	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

30	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

31	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

32	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

33	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

34	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

35	Who	To Whom	What	How
NE	T A V	T A V	1 1G 2 2G 3	T C L R I
R	F M S	F M S	4 5 6 7 8	RM G W D T
Co	L E Q	L E Q	9 10 11 12 X	B O S P NV

36	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

37	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

38	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

39	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

40	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

41	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

42	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

43	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

44	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

45	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

46	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

47	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

48	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

49	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

50	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

51	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

52	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

53	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

54	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

55	Who	To Whom	What	How
NE	T A V	T A V	1 1Q 2 2Q 3	T C L N I
R	F M S	F M S	4 5 6 7 8	RM G W O T
Co	L E O	L E O	9 10 11 12 X	B O S P NV

56	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

57	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

58	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

59	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

60	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

61	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

62	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

63	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

64	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

65	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

66	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

67	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

68	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

69	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

70	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

71	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

72	Who			To Whom			What					How				
NE	T	A	V	T	A	V	1	1G	2	2G	3	T	C	L	R	I
R	F	M	S	F	M	S	4	5	6	7	8	[illegible]	G	W	B	T
Co	L	E	O	L	E	O	9	10	11	12	X	B	O	S	P	SV

Activity Stopped

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

Time Stopped

Hour								Minute							
6	7	8	9	10	11	12		0	1	2	0	1	2	3	4
1	2	3	4	5	6	7	8	3	4	5	5	6	7	8	9

SRI SECONDARY OBSERVATION INSTRUMENT

Training Manual

Fall 1977

SRI SECONDARY OBSERVATION INSTRUMENT
(Teacher-Focus)

I OVERVIEW

The SRI teacher-focus Secondary Observation Instrument (SOI) provides a record of activities that occur in the classroom and the interactions between teachers and students, focusing on the teacher and those persons with whom he or she is interacting. The instrument was designed to be sensitive to different instructional methods, interpersonal interactions, and classroom environments. For the purpose of this study, the lead teacher in the classroom will be regarded as the focus person.

The observation instrument assesses the educational processes, which include teacher behaviors, interactions between teachers and students, and the groupings of teachers and students that occur during classroom activities.

The observation instrument contains three sections: Identification and Classroom Information, Classroom Snapshot, and Five-Minute Interactions. Classroom information is recorded in all of these sections, and each section will be described in detail in Section II of this manual, "Explanation of Coding Procedures."

The first section, Identification and Classroom Information, provides identification information necessary for data processing and analysis, and records the number of adults and students regularly in the classroom and the duration of the class.

The second section is the Classroom Snapshot. The Snapshot is a form that yields data about the nature of the activities of each adult and student in the classroom, the size of the groupings, and the materials being used. From this section, information is obtained on how the teacher spends his or her time and with whom, how the aides spend their time and with whom, how often the students operate independently, and the activities that occur. Materials used are also recorded.

The third section is the Five-Minute Interaction (FMI). The Five-Minute Interaction can be used to observe teachers in group interactions or working alone. It consists of a series of frames in which each behavior/interaction is recorded in the four categories provided: who, to whom, what, and how. Several frames that follow each other record the entire interaction, or, for single individuals, describe the observable interaction.

At the beginning of each observation booklet there is one set of each of the Identification and Classroom Information section. Subsequent pages contain five sets of the Classroom Snapshot and Five-Minute Interaction frames. The Identification and Classroom Information section is coded only once during the class period; the Classroom Snapshot and the FMI are coded five times per class period.

II EXPLANATION OF CODING PROCEDURES

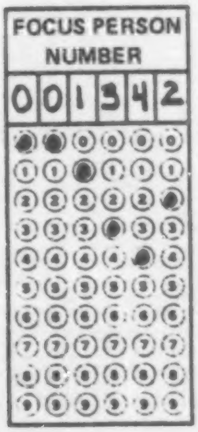
Information is recorded on the SRI Secondary Observation Instrument (SOI) by filling in appropriate boxes and marking appropriate circles.

A. Identification and Classroom Information

The Identification Information section is on the first page of the SOI. The coding of each of its sections is explained in the following subsections.

1. Focus Person Number

Each teacher observed has an identification number. Each booklet should only contain observations for the teacher identified in the Focus Person Number grid. To record the teacher number all six boxes at the top provided should be filled in and the corresponding circle marked. A teacher identification number of 1342 would be recorded as shown below.

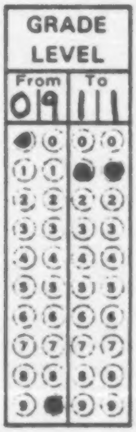


FOCUS PERSON NUMBER

001342

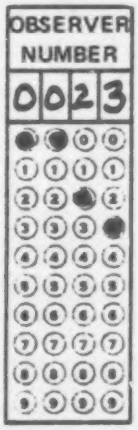
2. Grade Level

The boxes in this SOI section are used to identify the range in or grade levels of the students in the classroom. The school years recorded are those of the lowest and highest grade levels in the classroom. A classroom whose lowest grade level is the ninth grade and whose highest grade level is the eleventh grade would be coded as shown below.



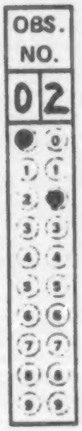
3. Observer Number

Each observer has an identification number. An observer's number is recorded on every booklet that he or she uses, as shown below.



4. **Observation No.**

The observation period number identifies the chronological order of booklets used for observations on a specific teacher. Since teachers are to be observed on three different days, observation periods 1 through 3 will be represented by three different booklets and three different dates. The second observation period for a specific teacher would be recorded, as shown below.

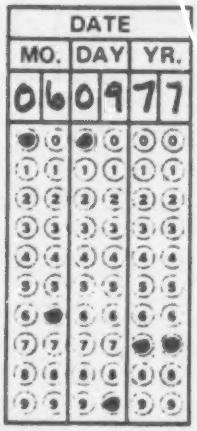


OBS. NO.

0 2

5. **Date**

In coding the date, all six boxes provided must be filled in. The correct method for recording June 9, 1977 is 060977, as shown below.

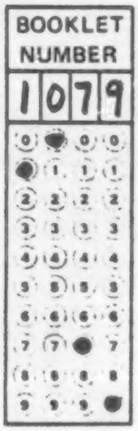


DATE

MO.	DAY	YR.
06	09	77

6. Booklet Number

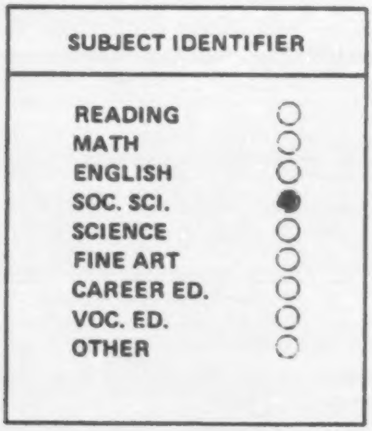
The booklet number recorded in the grid provided is the same number printed in the upper right hand corner of the cover page of the booklet. Booklet number 1079 would be recorded, as shown below.



BOOKLET NUMBER			
1	0	7	9
0	●	0	0
●	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	●	7
8	8	8	8
9	9	9	●

7. Subject Identifier

This grid identifies the academic subject that would be listed on a class schedule for the classroom. Therefore, if reading were being taught in a social studies class, social studies would be marked in the gird, as shown below.

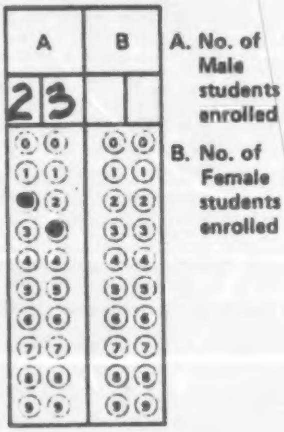


SUBJECT IDENTIFIER

READING ○
MATH ○
ENGLISH ○
SOC. SCI. ●
SCIENCE ○
FINE ART ○
CAREER ED. ○
VOC. ED. ○
OTHER ○

8. No. of Students Enrolled

The booklets provide grids to record the number of male and female students enrolled. For the purpose of this study the student enrollment will not be distinguished by sex. Only the A section (No. of Male students enrolled) needs to be used. The B section will be left blank. A class which has 23 students enrolled would be recorded, as follows.



A		B	
2	3		
○ 0	○ 0	○ 0	○ 0
○ 1	○ 1	○ 1	○ 1
●	○ 2	○ 2	○ 2
○ 3	●	○ 3	○ 3
○ 4	○ 4	○ 4	○ 4
○ 5	○ 5	○ 5	○ 5
○ 6	○ 6	○ 6	○ 6
○ 7	○ 7	○ 7	○ 7
○ 8	○ 8	○ 8	○ 8
○ 9	○ 9	○ 9	○ 9

A. No. of Male students enrolled

B. No. of Female students enrolled

9. Focus Person Identification

Information for this subsection's four lines is written in, as shown below.

Teacher Mary Brown
School George Washington High
City Sacramento, CA
Observer Janet Smith

10. No. of Adults in Classroom

This subsection is used to record the number of teachers and aides that regularly work in the classroom and the number of volunteers and visitors present on the day of observation. Teachers must be asked the information about number of teachers and aides.

⓪ ① ② ③ ④ Number of teachers that regularly work in the classroom
⓪ ① ② ③ ④ Number of aides that regularly work in the classroom
⓪ ① ② ③ ④ Number of volunteers present
⓪ ① ② ③ ④ Number of parents/visitors present

11. Group by ability within class

This information is recorded with a yes or no answer. The teacher is to be asked, "Do you normally group the students in the class by ability level?"

Ⓨ Ⓝ Group by ability within class

12. Total Class Duration

The official length of the class, in minutes, is recorded in this subsection. If a class period is 55 minutes, it would be recorded, as follows.

Total Class Duration

○ 20 minutes
○ 25 minutes
○ 30 minutes
○ 35 minutes
○ 40 minutes
○ 45 minutes
○ 50 minutes
● 55 minutes
○ 60 minutes
○ 70 minutes
○ 80 minutes
○ 90 minutes
○ 100 minutes
○ 110 minutes
○ 120 minutes

B. Classroom Snapshot

The Classroom Snapshot is coded just before the coding of the Five-Minute Interaction. The Snapshot attempts to record the distribution of adults and students among the activities which are occurring simultaneously at the beginning of the observation. Essentially, the Snapshot assesses the activities occurring, the materials being used, grouping patterns, teacher and adult participation, and students in activities independent of adults.

As shown on the following page, the Snapshot, the classroom activities are listed down the left side of the page, and the materials are listed across the top. The observer records the required information in each appropriate box, recording each unique grouping he or she observes. Therefore, a completed Snapshot will reflect the number of groupings, the activity and materials of each group, the size of each group, and whether an adult is present.

SRI CLASSROOM SNAPSHOT

MATERIAL → ACTIVITY ↓		01 Textbook	02 Workbook Worksheet	03 Test	04 Game/ Manipulative Material	05 Reading/ Math Kit	06 Machine Chalkboard	07 Non Curricular Reading	08 No Material
1 Reading Silently	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① ● Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
02 Reading Aloud	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
03 Making Assignments	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
04 Instruction	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
05 Discussion	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
06 Practice Drill	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ ● Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
07 Written Assignments	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
08 Taking Test Quiz	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	● Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
09 Non-math or non-reading Instruction	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
10 Social Inter-action Ⓣ Ⓐ Ⓐ ⓪	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
11 Student Univolved	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
12 Being Disciplined	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
13 Classroom Manage-ment Ⓣ ● Ⓐ ⓪	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ

For this Snapshot Only

Number of Adults in Classroom	0 1 ● 3 4 5 6 7 8 9
Number of Students in Classroom	0 ● 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 ● 9
Sequence No.	1 2 3 ● 5

The number of groupings recorded can vary with the structure of the classroom. If all students are involved in the same activity using the same type of materials, and the teacher is with the group, only one grouping would be recorded on the Snapshot. If the students are working in several groups in various activities and using different materials, a recording must be made for each unique group.

An explanation of the coding follows:

Activity 01

Reading Silently: Five students are reading silently from books which are designated reading textbooks; there is no adult with the group.

Activity 06

Practice Drill: Twelve students are having a spelling drill from worksheets; the teacher is actively participating in the activity.

Activity 08

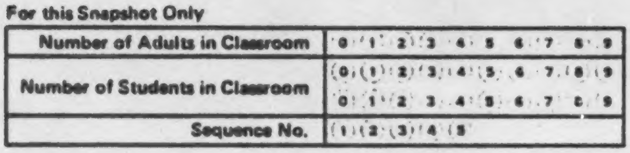
Taking Test, Quiz: One student is alone, taking a test; no adult is present.

Activity 13

Classroom Management: The other adult in the classroom is involved in some type of classroom management; no students are with this adult.

"For This Snapshot Only"

The rest of the Snapshot information recorded is grouped under the heading "For This Snapshot Only." The appropriate number is recorded next to each category of persons, showing that this is the number present. The corresponding sequence number is then recorded.



For this Snapshot Only

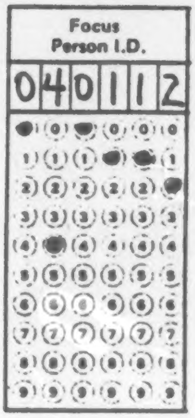
Number of Adults in Classroom	0 1 2 3 4 5 6 7 8 9
Number of Students in Classroom	0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9
Sequence No.	1 2 3 4 5

C. The Five-Minute Interaction (FMI)

Three different sorts of information are recorded in the SOI FMI section. First, information is recorded about the focus person, the activity engaged in, and whether there has been a change in the activity during the FMI. Second, the chronological order or the particular FMI being coded (there are five FMIs in each observation booklet) and the starting and stopping time of each FMI are indicated. Third, the interactions and activities of the focus person are recorded.

1. Focus Person Number

The focus person has a unique identification number. That number is coded in the appropriate boxes at the beginning of each SOI. An example is shown below.

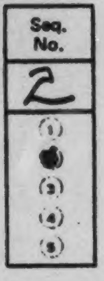


Focus Person I.D.

0	4	0	1	1	2
●	0	●	0	0	0
1	1	1	●	●	1
2	2	2	2	2	●
3	3	3	3	3	3
4	●	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

2. FMI Sequence Number

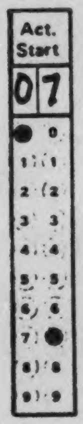
In order to keep the observation within a booklet in chronological order during the data processing, each FMI in the booklet has been assigned a sequential number. For example, the second FMI in the booklet would be coded as shown below.



Seq. No.
2
1
●
3
4
5

3. Activity Started

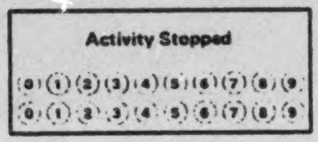
The activity in which the focus adult is engaged at the start of the FMI is recorded in this SOI section. The number of the activity may or may not be the same as that indicated for the focus person in the Classroom Snapshot. If the focus person is involved in Activity 07 (as defined in Section III of this manual) at the beginning of the FMI, the coding would be as shown below.



Act. Start	
0	7
●	0
1	1
2	2
3	3
4	4
5	5
6	6
7	●
8	8
9	9

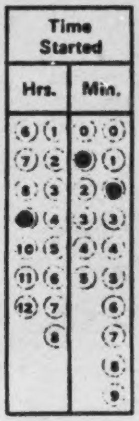
4. Activity Stopped

When the FMI is completed, record the activity in which the focus person is involved. If he/she is engaged in an activity other than that which has been recorded at the beginning of the FMI, the new activity is recorded in the Activity Stop section.


Activity Stopped
0 1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9

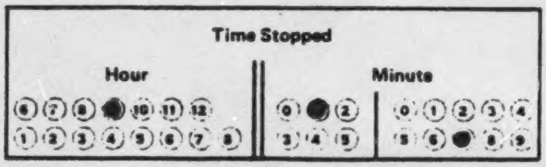
5. Time Started

A clock or watch should be checked before Time Started is recorded and the FMI is begun. In coding the time, the SOI boxes indicating the hour and minute must be filled in accurately. The Hour and Minute sections are divided as shown below. Below is shown the correct coding for 9:12.


Time Started
Hrs.
Min.

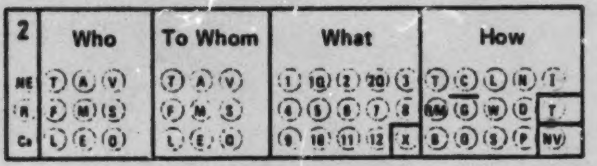
6. Time Stopped

At the end of five minutes, coding is stopped and the time is recorded in the Time Stopped box at the end of the FMI. Although it is important that the observation be completed in five minutes, it is more important to show the actual times started and stopped. If coding stops at 9:17, correct coding of that time would be as shown below.


Time Stopped
Hour
Minute

7. Interaction Frames

Interactions in the classroom as well as student and adult behavior are recorded in the SOI FMI section, which consists of identical interaction frames, such as the one shown below.



Each frame has five columns. The narrow column on the far left contains the three codes, Non-English (Ne), Repeat (R) and Cancel (Ca). These circles are marked to indicate that a language other than English is being used (Ne), that the frame should be repeated (R), or that the frame should be cancelled (Ca).

The other four columns can be strung together to form an interaction sentence: Who, To Whom, What, and How.

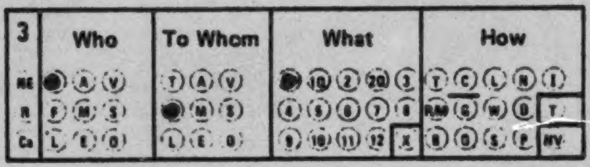
The Who column contains nine codes that refer to a person or a group of persons. These codes identify the initiator of the action. In the sentence methaphor, the Who codes are the subject of the sentence.

The next column, the To Whom column, contains the same nine codes as the Who column. In the interaction sentence, the codes in this column are the object of the action--the person to whom a statement or action is directed. One code is marked in the Who column and one code in the To Whom column of each frame; no more than one code may be recorded in each column.

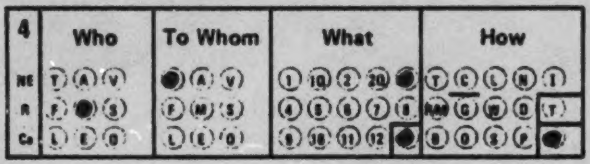
The What column contains 14 codes which are categories of actions or behaviors. Some examples are Questions, Responses, and Praise. These codes are the verbs of the interaction sentence. Only one of the What codes is coded in each frame. In addition to these 14 codes, one other code appears in the What column. This is Movement (X) and is coded when movement occurs with the appropriate What code.

A complete interaction sequence will take two or more frames and will show at least the initiation of the interaction and the response or lack of response to that initiation. An example of an interaction sequence is shown below. (Definitions of the codes are included in Section IV of this manual).

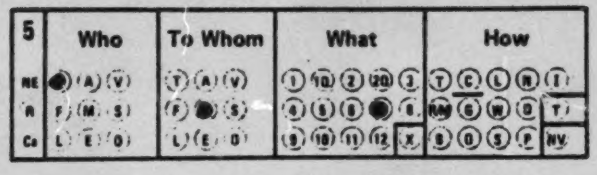
1. Teacher: "Shut the door."



2. John: Walks to the door and shuts it.



3. Teacher: "Thank you, John."



Operational definitions of the Who, To Whom, and How codes are given in Section IV of this manual. Under each What and How definition appear several typical examples of that code activity that an observer might encounter in a classroom. The list of codes is shown in Table 1.

Table 1

INTERACTION CODES

Who/To Whom

Code	Description
T	Teacher
A	Adult
V	Visitor
F	First Interaction
M	Main Student
S	Small group (2-6)
L	Large Group (7-total class minus one)
E	Everyone
O	Object

What

Code	Description
1	Command
1Q	Direct question
2	Request for open-ended information
2Q	Open-ended question
3	Response
4	Instruction
5	Social comment
6	Activity-related comment or action
7	Support/acknowledge
8	Praise
9	Correction
10	No response/don't know
11	Refuse/reject
12	Observing
X	Movement

How

Code	Description
T	Task
R/M	Reading/Math
B	Behavior
C	Corrective feedback
G	Guide
O	Organizing
L	Laughter
W	Warmth
S	Sad
N	Negative
D	Disciplinary Departure
P	Punish
I	Idea, opinion
T	Touch
NV	Non-Verbal

III DEFINITIONS OF CLASSROOM SNAPSHOT ACTIVITIES

The Classroom Snapshot is a record of the activities and materials defined respectively in Tables 2 and 3. The codes in the tables are those recorded on the SOI.

Table 2

CLASSROOM SNAPSHOT ACTIVITIES

Code	Activity	Description
01	Reading Silently	Students are reading silently to themselves as a group activity or are working on individual assignments.
02	Reading Out Loud	One or more students are reading a section from a play aloud or are reading a section from a book for the class to hear. Reading aloud is usually not done in unison; generally students take turns reading sequential sections from a book. The teacher or student(s) can also read aloud while the rest of the class members follow along in their own texts.
03	Making Assignments	Assignments are being made or adults and students are setting up before the actual lesson begins.
04	Instruction	An adult is informing some grouping of students about a subject. Also, one or more students are receiving information or feedback on work they have completed or are being evaluated on their work preparatory to continuing the assignment.
05	Discussion	Discussion takes place regarding lecture material, assignments, problems.
06	Practice Drill	One or more students are verbally involved in repetitive or rote work. This activity must be differentiated from that of category 07, Written Assignments.
07	Written Assignments	One or more students are writing papers, doing computation, or involved in any other silent written work.
08	Taking Test, Quiz	One or more students, either as a group or as individuals, are taking a test or quiz about the subject matter.
09	Non-reading Instruction	One or more students are involved in an academic activity whose primary emphasis is not reading.
10	Social Interaction	One or more students and a teacher or aide are interacting about work or subjects other than class-related material.
11	Students Uninvolved	This category is recorded when one or more students are not involved in any activity or are arriving or departing. One or more students are waiting for the teacher in order to begin an assignment or take an exam.
12	Being Disciplined	One or more students are being reprimanded for their behavior or are being sent out of the room for disciplinary reasons.
13	Classroom Management	One or more adults are performing duties related to the classroom but not directly related to any activity which is occurring at the time of the Snapshot. Examples are a teacher correcting papers at his or her desk, setting up materials for the next class, or arranging books on a shelf. Students and adults are putting away materials or books and are getting ready to leave.

SRI CLASSROOM SNAPSHOT

MATERIAL → ACTIVITY ↓		01 Textbook	02 Workbook Worksheet	03 Test	04 Game/ Manipulative Material	05 Reading/ Math Kit	06 Machine Chalkboard	07 Non Curricular Reading	08 No Material
1 Reading Silently	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
02 Reading Aloud	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
03 Making Assignments	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
04 Instruction	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
05 Discussion	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
06 Practice Drill	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
07 Written Assignments	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
08 Taking Test Quiz	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
09 Non-math or non-reading Instruction	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
10 Social Interaction Ⓣ Ⓐ Ⓐ Ⓞ	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
11 Student Univolved	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
12 Being Disciplined	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
13 Classroom Management Ⓣ Ⓐ Ⓐ Ⓞ	T	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	A	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	O	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ
	i	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ	① Ⓢ Ⓛ Ⓔ

For this Snapshot Only

Number of Adults in Classroom	⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
Number of Students in Classroom	⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
Sequence No.	① ② ③ ④ ⑤

Table 3

CLASSROOM SNAPSHOT MATERIALS

Code	Materials	Description
01	Textbook	This refers to printed materials (which students do not writ in directly) specifically designed to instruct through sequential or graduated lessons or chapters.
02	Workbook Worksheet	This refers to consummable materials that students work with with to develop concepts or skills. A workbook is distinguished from a textbook in that a workbook contains more emphasis on exercises than reading. This could be commercially prepared workbooks, a dittoed worksheet, or a blank sheet of paper on which students work problems or write answers. If students are copying work from the chalkboard onto their paper, use this category.
03	Test	This refers to printed materials used specifically for evaluation purposes. It could also include a blank paper on which the child writes test problems or answers.
04	Game/Manipulative Material	This refers to games or manipulative materials that provide practice, drill, or instruction. Any physical object that the student manipulates for learning is included here. Standard classroom materials are not coded (e.g., pencils, crayons scissors, and erasers). Rulers and compasses are coded here.
05	Reading/Math Kit	This refers to commercially or teacher prepared sets of materials, usually in a package, box, or file, that children can be assigned to work in, independent of adults.
06	Machine Chalkboard	This includes any mechanical equipment or chalkboard that is used to teach or provide practice. It includes filmstrips, films, cassette tapes, overhead projector, hand calculators, computers, etc. This category is coded only when no other materials are being used, e.g., when a teacher is writing problems on the chalkboard and children are working them on paper, category 02 (workbook, worksheet), is coded. However, when the teacher is writing problems on the overhead and the students are working on them mentally, this category (06) is used.
07	Non Curricular Reading	This refers to any reading material which is not specified as part of the regular curriculum of the classroom, such as library books or comic books.
08	No Material	This is coded when no materials at all are being used.

IV DEFINITIONS FOR FIVE-MINUTE INTERACTION CODES

A. The Ne, R, and Ca Codes

Coded Ne, R, and Ca circles give the computer general instructions about processing interaction frames. Table 4 presents these codes.

Table 4

THE Ne, R, AND Ca CODES

Code	Item	Description
Ne	Non-English	If the interaction being observed is carried on in a language other than English, Ne is coded in the left-hand column of each appropriate frame.
R	Repeat	Code R in an interaction frame indicates that the interaction in the frame above is repeated. If the interaction or activity being observed continues without change, code R is used in the left-hand column for all frames following the initial coding until the activity stops or changes. Only R is entered; no other coding is necessary.
Ca	Cancel	When a mistake is made in coding an interaction, code Ca is marked in the left-hand column of the miscoded frame, and the observer then continues coding in the following frame.

B. The Who Column

The Who column indicates who is doing the talking or performing the action. Table 5 presents these codes.

Table 5

CODES FOR THE WHO COLUMN

Code	Item	Code Usage (Description)
T	Teacher	The one person who ultimately is responsible for the everyday conduct of the classroom--also called the focus teacher, for the purpose of this study.
A	Adult/Aide	Any adult in the classroom other than the focus teacher
V	Visitor	Any outside person who enters a classroom and interrupts a teacher with call slips, messages, and the like.
F	First Interaction	When coding the first frame of an interaction between an adult and student, the student is coded F; any subsequent frames of that interaction the student is coded M.
M	Main Student	A student with whom the teacher is interacting.
S	Small Group	Two to six students interacting with the focus teacher.
L	Large Group	Minimum of 7 students and up to the total class minus one interacting with the focus teacher.
E	Everyone	All students present in the classroom (regardless of number) interacting with the focus teacher.
O	Object	An instructional machine or audio visual equipment.

C. The To Whom Column

The To Whom column indicates the person or group talked to or interacted with or the students' materials used. The codes used in this column are the same as the codes for the Who column and are given in Table 5.

D. The What Column

The What column indicates categories of observed actions or behaviors. The What column codes are given in Table 6.

Table 6

CODES FOR THE WHAT COLUMN

CODE	ITEM	USAGE
1	Command	Code 1 is recorded for an order or request that asks for a response free of argument. It has one anticipated response that is expected to be carried out verbally or nonverbally. Examples "Jim, please shut the curtains so we can get started." "It is your turn to read, Sue."
1Q	Direct Question	Code 1Q is recorded for a request for direct recall of previously learned material. A yes/no answer or some other type of specific response (such as a statement of facts, itemization, classification, or a definition) or an action is anticipated. Examples "Can you explain what 'ratio' means?' "What is wrong with problem number three?"
2	Request for Open-Ended Information	Code 2 is recorded for a request (in command form) for information that allows the respondent a free expression of ideas, feelings, and opinions. Examples "Tell me what you think the author was trying to tell us in this story." "Tell the class which part of the film you found most interesting."
2Q	Open-Ended Question	Code 2Q is recorded for a question which allows the respondent a free expression of ideas, feelings, and opinions. Examples "Who was your favorite character in the story?"

Table 6 (Continued)

CODE	ITEM	USAGE
3	Response	Code 3 is recorded for compliance (verbal or nonverbal) with a command (Code 1), to a request for open-ended information (Code 2), to a question (Codes 1Q, 2Q), to support/ acknowledgment (Code 7), to praise (Code 8), or to a correction (Code 9). Code 3 is not recorded automatically after a question. If a student refuses a request, Code 11 is used. If he or she does not respond, Code 10NV is recorded. If a student states that he or she does not know the answer, Code 10 is entered. Examples Student smiles proudly after teacher praises his correct answer. Student or adult answers a question. Student stops combing her hair on request.
4	Instruction	Code 4 is used for students reading aloud to teacher, and for the following focus-adult actions: • Giving information verbally to others; for example, reviewing lessons, giving directions for assignments, and lecturing. • Explaining new school rules. • Demonstrating an activity nonverbally. • Discussing a student's completed assignments. • Explaining rules of behavior for the classroom. • Explaining the schedule to a new student. • Describing the agenda for the class period to the class. Examples Teacher says to class, "Today we are going to review your test on Fahrenheit 451."

Table 6 (Continued)

CODE	ITEM	USAGE
4	Instruction (continued)	**Examples** (continued) Teacher says to class, "Remember that a semicolon must separate two independent clauses." Teacher says to class, "The principal says that students may not loiter around the student lounge after the bell rings."
5	Social Remarks	Code 5 is used for greetings, personal compliments, remarks that are social or not related to a task. For Code 5 actions not accompanied by talking, 5NV is recorded. If the teacher leaves the room, code 5NO for the duration of absence. **Examples** Teacher says to student, "You got your hair cut--I hardly recognize you." Student says to teacher, "I'm getting a new stereo for my birthday." In a reading class teacher says to student, "I saw you playing football yesterday."
6	Activity-Related Comments or Actions	Code 6 is used for a comment concerned with the instruction at hand. For teacher activities connected with classroom instruction, 6NV is recorded. Code 6NO if a student complains about an assignment or activity. **Examples** Teacher has been lecturing and student comments. The teacher is passing out students' papers. Student comments on the section of the story that he or she just read. Teacher is setting up materials for students' use. Student says, "Miss Smith, I don't like this assignment. It's dumb."

Table 6 (Continued)

CODE	ITEM	USAGE
7	Support/Acknowledge[*]	Code 7 is used for statements that are supportive or show recognition, for example, an indication that a response, product, or behavior is recognized or agreed with, or for repeating another individual's statement immediately, as a form of acknowledgment. **Examples** Teacher repeats a student's answer as an acknowledgment. Teacher says to student, "That's a difficult word, but try to sound it out."
8	Praise	Code 8 is used for verbal or nonverbal approval or praise directed to responses, products, or behaviors. **Examples** Teacher says to class, "The results of your tests are superb. I'm very pleased!" After class settles down as a result of teacher's request, he or she says, "That's better. Thank you."
9	Correction	Code 9 is recorded for attempts by the teacher to inform student(s) that a response is not correct or that behavior is unacceptable. **Examples** Teacher asks student to stop combing her hair. Student has responded incorrectly to the teacher's request to spell a word. Teacher says, "No, that's not right."

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[*] Warm and encouraging support is coded 7W.

Table 6 (Continued)

CODE	ITEM	USAGE
10	No Response/Don't Know	Code 10 is used for verbal or nonverbal (for instance, shoulder shrugging) indications that an individual does not know the answer to a question. If the respondent says nothing and does not acknowledge the question, 10NV is coded. Examples The teacher has asked the student a question to which the student replies, "I don't understand." Student does not respond when asked to pass out the books. Student is talking and does not respond to teacher's request to be quiet.
11	Refuse/Reject	Code 11 is used for very clear verbal or nonverbal refusals. For very clear verbal or nonverbal rejections, 11N is recorded. Examples An adult refuses a student's request for more time on a quiz. A teacher asks a student to come up to the blackboard and explain a math problem, and the student says, "I won't do it." Student puts his or her books away even though the teacher has asked the student to read silently until the end of class. An adult rejects a student's demand for attention.
12	Observing/Listening	Code 12 is used for an adult who is listening to others. For an adult who is observing others, 12NV is recorded. All modifiers coded in the How column with Code 12 refer to the person(s) in the To Whom column. B is not entered with 12. Examples Teacher is listening to a small group of students prepare a debate.

Table 6 (Concluded)

CODE	ITEM	USAGE
12	Observing/Listening	**Examples** (continued) Teacher observes class reading silently. Teacher is watching a student walk back to his seat.
X	Movement	Code X is used when the Who of the interaction moves from one location to another. X can be recorded with any What code. **Examples** As the teacher is instructing, he or she is walking back and forth in the front of the classroom. A student walks over to the teacher while asking about the meaning of a word.

E. The How Column

The How column gives information about the action, describing its content or effect. Table 7 details the codes for the How column.

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Table 7

CODES FOR THE HOW COLUMN

CODE	ITEM	USAGE
T	Task	T is coded for an interaction (other than one based on reading) that is related to the subject matter of instruction. The subject matter of instruction is defined on the SOI cover page, in the Subject Identifier section. The Task code may be recorded with any What code except 5, which, by definition, is for a comment not related to a task. **Examples** In math class teacher ask student, "How is a decimal number converted to a percentage number?" In geography class teacher asks student, "Can you name all the continents for me?" In history class teacher asks students, "What was the name of the third president of the United States?"
R/M	Reading/Math	For this study, code R is used for interactions concerned with reading, including spelling, vocabulary, grammer, oral reading, reading comprehension, creative writing, writing construction, and related subjects. If reading is being taught in a "content area" (such as in oral reading of a social studies text), the Reading and Task codes both are marked. If reading is being taught in a reading class, only the Reading code is marked. **Examples** Teacher tells student, "You read that paragraph very well, Jim." Teacher tells student, "I know that's a difficult word but try to sound it out." Teacher asks student, "Who was the main character in the story?"

Table 7 (Continued)

CODE	ITEM	USAGE
B	Behavior	B is entered for interactions related to classroom behavior (deportment), for example, correction of a student's unacceptable behavior or praise of acceptable behavior. When a teacher is explaining rules of conduct, code B is used with code 4 in the What section. **Examples** Teacher says to group, "Everyone please be quiet so we can hear Janie read." Teacher says to student, "Mary, if you don't stop talking I'll Have to ask you to leave the class." Teacher says to class, "I want to thank all of you for being so courteous to our visitor yesterday."
C	Corrective Feedback	The corrective feedback code is used any time an adult is attempting to modify a student's behavior or academic response. A teacher may use various methods, and the appropriate What code will indicate which method was used. **Examples** The teacher has asked a student from which Shakespeare play "West Side Story" was derived. The student answers, "MacBeth." The teacher says: (1) "No, that's not right." (2) "Are you sure that 'Macbeth' is the right answer?" (3) "No, the play I'm thinking of is a story of two young people who are in love but their families are enemies." (4) "No, the right answer is 'Romeo and Juliet.'"

Table 7 (Continued)

CODE	ITEM	USAGE
G	Guide	The G code is used only with the 4 in the What section. The 4G code is a particular type of corrective feedback: the teacher is guiding the student to a correct answer by giving more information but not the answer to the question itself. **Examples** The teacher has asked a student the meaning of "subtropic." The student has responded that she doesn't know the answer. The teacher then says, "Remember yesterday we talked about prefixes and how they influence the meaning of a word. We talked about sub and that it meant under or below. Think how 'sub' could influence the meaning of the word "subtropic."
O	Organizing	The O code is used for interactions in which the teacher explains the procedures of the class and the academic work that is expected from the students, for example, when the teacher assigns work, makes explicit the organization of materials or the sequence of subject matter to be taught and the way in which it will be taught, or announces the time allowed for an activity. O is also recorded when the focus teacher requests that students prepare to begin or end an activity, or directs them as they do this. For example, O is entered for passing out seating patterns, or setting up or dismantling necessary equipment. The code is used for responses to these directions. O is not recorded if academic instruction is occuring. **Examples** Teacher is telling students to clear their desks. Teacher is giving students worksheets.

Table 7 (Continued)

CODE	ITEM	USAGE
L	Laughter	Code L is used only when there are obvious expressions of happiness, such as laughing or smiling, or when teacher or student(s) with whom the focus teacher is interacting verbally express(es), directly or indirectly, eagerness and interest in the activity. **Examples** Student is laughing at teacher's comment. Teacher displays a great deal of enthusiasm by laughing about a particular part of a story.
W	Warmth	W is entered when interactions occur that express support or encouragement for another person in the classroom. This code will be used with the 7 code in the What section when the student is having difficulty with the classroom work and the teacher encourages the student to persevere **Examples** Student has responded to teacher's question by stating that she doesn't know the answer. Teacher says, "Think about it for a moment, I know you can answer that." Student is having difficulty sounding out a word. Teacher says, "I know it's difficult, but try it again."
S	Sad	S is coded when a student obviously displays feelings of hurt or humiliation. These expressions may be obvious and accompanied by at least one of the actions listed as examples. **Examples** (on following page)

Table 7 (Continued)

CODE	ITEM	USAGE
S	Sad (continued)	Examples Student covers face with an object or hands. Student puts head down on desk. Student verbalizes that he or she feels hurt or humiliated. Student leaves room.
N	Negative	The N code is used for any sarcastic or demeaning statements by the teacher, and for overt displays of anger. Examples Student has answer incorrectly, and teacher says, "What a stupid answer!" Teacher displays a great deal of hostility and anger because students are not paying attention.
D	Disciplinary Departure	D is used when a teacher sends a student from the room for disciplinary reasons. Code D throughout the entire interaction. Examples Teacher says, "I will not argue any longer--go to the vice-principal's office."
P	Punish	The P code is used when, as punishment, the teacher withdraws privileges or assigns extra work, and when the student(s) respond to these punitive actions. Code P throughout the entire interaction. Example Teacher tells student he may not participate in a group game because of a misbehavior in class.

Table 7 (Continued)

CODE	ITEM	USAGE
I	Idea, Opinion	This code has two uses. Code I is entered when the teacher offers students the opportunity to state their preferences for specific materials or groupings or for the activities in which they wish to be involved or the sequence of those activities. When the I code is used in this way, it is used also with the O, or Organizing code. Code I is used also when students respond or initiate a statement that demonstrates a synthesis of previously acquired knowledge. A 2 or 2Q input would encourage this type of response but it might also occur after a 1Q question if the student elaborated beyond the information initially requested. Examples Teacher asks the group, "Class, would you prefer doing your spelling list before or after viewing the film?" Teacher tells student, "You may choose any of the books on the back bookcase to read during the last 15 minutes of the class." The teacher has asked a student to spell the word "perceive." Student responds "I know that it's spelled p-e-r-c-e-i-v-e because the rule is that i comes after e except after c, and perceive has a c."
T	Touch	Whenever the focus person touches the individual with whom he or she is interacting, T is used along with the other relevant What code. Example Teacher touches the shoulder of a student as he or she asks a question.

Table 7 (Concluded)

CODE	ITEM	USAGE
NV	Nonverbal	When the action being coded is not accompanied by words, NV is entered in the What column together with the other relevant What code. **Example** Teacher nods to student's answer.

SRI

READING COMPREHENSION TEST

Winter 1978

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READING COMPREHENSION

TO THE STUDENT: This test will show how well you can read and understand the stories.

Read each story. Then do the items following it. Choose the best answer for each item. Then check the circle next to the answer you choose.

SAMPLE ITEM*: Read the passage below. Then do the sample and mark your answer.

Maria was taking her first long ride in the new blue Pinto. She was hoping it would get thirty miles to a gallon of gas. Today on the freeway she would drive it and see.

What kind of a car was Maria driving?

- ○ Datsun
- ○ Pinto
- ○ Fury
- ○ Toyota

You should have checked the circle next to "Pinto" because the story tells you that Maria was driving a "Pinto."

---

*The Sample and Items 1-3 were developed by SRI, Menlo Park.

STOP

Read each story and do the items that follow. Check the circle next to the answer you choose.

This was a good day for Al. He just got his first job! Every day after school he would work at the bike shop for one dollar an hour. Mr. Sam, his boss, said he would let Al buy any bike in the shop at half price. Al always wanted a ten-speed of his own. He smiled at his good luck.

1 How did Al feel?

○ happy
○ surprised
○ afraid
○ unhappy

2 How much would Al earn an hour?

○ fifty cents
○ two dollars
○ one dollar
○ ninety cents

3 What kind of bike did Al want to buy?

○ five-speed
○ Sting Ray
○ Moped
○ ten-speed

GO TO THE NEXT PAGE

Stuart liked to visit the airport. He liked to watch the big jet airplanes land and take off. He thought that someday he would like to be a pilot. He would like to learn how to fly the big passenger planes. Then he could travel all over the world.

4 Stuart liked to visit the

○ airport
○ beach
○ park
○ playground

5 Stuart liked to watch the

○ airplanes
○ birds
○ clouds
○ kites

6 Stuart thought he might like to become a

○ captain
○ driver
○ passenger
○ pilot

7 If Stuart learned to fly, he could

○ dive
○ explore
○ float
○ travel

8 Stuart wanted to fly a plane for

○ freight
○ mail
○ passengers
○ soldiers

GO TO THE NEXT PAGE

The big store looked very far away. Maria and Anna wondered if they would ever get there. It was very hot and crowded on the sidewalks. They had to squeeze between the people as they ran. At last they came to the big glass doors. The doors swung open and they were soon inside the cool building. They rushed down the stairs to the toy shop. Right in front of them were the skateboards which they had come to buy.

9 Maria and Anna were in

- ○ **a big city**
- ○ **a small village**
- ○ **the country**
- ○ **the mountains**

10 The girls went to the big store to buy

- ○ **clothes**
- ○ **groceries**
- ○ **skateboards**
- ○ **toys**

11 Maria and Anna were in a hurry to get to the store because they were

- ○ **excited**
- ○ **hungry**
- ○ **late**
- ○ **tired**

12 On the sidewalks it was

- ○ **cold**
- ○ **hot**
- ○ **wet**
- ○ **windy**

13 On the way to the store Maria and Anna saw lots of

- ○ **horses**
- ○ **people**
- ○ **trains**
- ○ **trees**

14 The store had big doors made of

- ○ **glass**
- ○ **metal**
- ○ **wire**
- ○ **wood**

GO TO THE NEXT PAGE

The polar bear is the king of the frozen north. The white coat of the polar bear is so similar to his surroundings that it helps him hunt and protects him from danger.

The polar bear's feet are heavily covered with hair. His vision is very good, and he has a sharp sense of smell. He is the best swimmer of the bear family. Fish, seals, sea lions, and walruses furnish most of his food.

During the winter the female bear buries herself in the snow, and there the young are born. The cubs weigh not more than two pounds and are only ten inches long. When fully grown they weigh about 1600 pounds and stand nine feet tall. These bears live about forty years.

The polar bear is hunted by Eskimos, who eat the flesh, use the bones for tools, and make the skin into rugs and garments.

15 For food, polar bears hunt

- ○ birds
- ○ fish
- ○ honey
- ○ plants

16 A polar bear's home is in

- ○ cold regions
- ○ deserts
- ○ forests
- ○ villages

17 Polar bears live around

- ○ four years
- ○ nine years
- ○ twenty years
- ○ forty years

18 Of the bear family, the polar bear is the

- ○ best swimmer
- ○ most gentle
- ○ smallest
- ○ strongest

19 At birth, the polar cubs weigh up to

- ○ two ounces
- ○ two pounds
- ○ ten pounds
- ○ sixteen pounds

20 The polar bear is most useful to the

- ○ Eskimos
- ○ Indians
- ○ seals
- ○ walruses

GO TO THE NEXT PAGE

The largest country in North America is Canada. It makes up most of the northern part of the continent.

Canada has an irregular coastline with fine harbors. Many of these harbors cannot be used because they are icebound in the winter. This problem is a serious handicap to the development of trade.

The western shores of Canada are washed by the Pacific Ocean, the eastern shores by the Atlantic Ocean, and the northern shores by the Arctic Ocean.

Canada is rich in mineral wealth and natural resources. Many discoveries have been made of rich deposits of oil, iron ore, and uranium. Most of the rivers and streams have waterfalls and rapids which offer great possibilities for the development of electric power. Even with all these advantages, the population of Canada is small.

During the warm summer season, important agricultural products are grown, the chief of which is wheat.

There are vast areas of valuable forest on the mountains in the western part of Canada. The many fur-bearing animals that inhabit these areas are a source of large revenue.

21 The above story is about

○ Canada
○ continents
○ large countries
○ North America

22 The area in the story is located in the

○ eastern part of North America
○ northern part of North America
○ southern part of North America
○ western part of North America

23 The story says the coastline is

○ irregular
○ regular
○ rugged
○ very smooth

24 A serious handicap for growth in trade is

○ a lack of streams
○ few harbors
○ icebound harbors
○ overproduction

GO TO THE NEXT PAGE

25 One of Canada's major industries is

○ citrus growing
○ glass blowing
○ mining
○ textile weaving

26 On Canada's eastern boundary is the

○ Arctic Ocean
○ Atlantic Ocean
○ Pacific Ocean
○ United States

27 Which of the following statements does this article suggest?

○ Canada has a profitable cotton industry.
○ Canada has few natural resources.
○ Canada has many unsettled areas.
○ Canada is a land-locked area.

GO TO THE NEXT PAGE

STONESTOWN ELEMENTARY SCHOOL

Starting Positions	Relay Teams		
	Team 1	Team 2	Team 3
One	John	Doug	Frank
Two	Henry	Bill	Fred
Three	Ed	Bob	Chuck
Four	George	Glenn	Keith

The Stonestown Elementary School has three relay teams. The members of each team and their starting positions are listed above. The coach has given special meanings to certain words.

"Teammates" are members of the same relay team. Therefore, Henry, George, and John are the teammates of Ed. A way to say this in symbols is:

T(Ed) = {Henry, George, John}

This expression reads: The teammates of Ed are Henry, George, and John.

"Peers" are members of the relay teams who have the same starting position. Therefore, Doug's peers are Frank and John. This relationship is expressed in symbols as:

P(Doug) = {Frank, John}

This expression reads: The peers of Doug are Frank and John.

GO TO THE NEXT PAGE

28 Frank's relay team is

○ Team 1
○ Team 2
○ Team 3
○ Team 4
○ none of these

29 George's starting position is

○ One
○ Two
○ Three
○ Four
○ none of these

30 How many teammates does Glenn have?

○ one
○ two
○ three
○ eleven
○ none of these

31 A teammate of John is

○ Bill
○ Bob
○ Frank
○ Keith
○ none of these

32 A peer of Frank is

○ Bill
○ Chuck
○ George
○ John
○ none of these

GO TO THE NEXT PAGE

Our use of enormous quantities of natural resources has caused much anxiety about the future. As our population grows, our resources are being exhausted at an increasing rate.

When our nation was young and had a small population, we thought our resources would last forever. With a small population, labor was scarce, and people did not bother to prevent waste.

By 1900, our vast forests were three-fourths gone. Today, our coastal fishing grounds are producing less than before, and much farmland has been lost to erosion. Most of our large cities are concerned about the problems of water supply, and many of our smaller cities are looking for additional water.

Fortunately, interested citizens, scientists, and government officials have become increasingly aware of our diminishing resources and are studying ways of saving them. Proper conservation, however, does more than protect resources for the future; it also increases their present production. The wise conservationist wants to use resources to provide for future generations as well as for our own.

Wise use means no waste. Conservationists urge that we manage our living resources to balance their consumption with the growth of a new supply. Whether it is trees, grass, or fish, no more should be used than can be replaced by normal growth.

Minerals, a funded resource, cannot replace themselves. Conservationists, therefore, advocate cautious use of them. Scrap metal, for example, should be melted down and used over again. Whenever possible, the more plentiful minerals should be used in place of the scarce ones.

With efficient use of our resources, we can meet our present needs and also provide for the future.

33 Natural resources are

○ labor forces

○ manufactured goods

○ raw materials

○ the national treasure

34 As our population grows, our resources are

○ consumed at the same rate

○ produced at a slower rate

○ replaced at a faster rate

○ used at a faster rate

35 The second paragraph is mainly about our

○ concern over conservation

○ lack of interest in conservation

○ methods of conservation

○ nation's size and population

36 The third paragraph chiefly describes the

○ increase in natural resources

○ location of vast forests

○ loss of natural resources

○ water supply of cities

37 According to this article, conservationists include

○ city councils

○ commercial fishermen

○ concerned citizens

○ irate farmers

38 Conservation is necessary because

○ new materials will be found

○ our resources are diminishing

○ we must use up our resources

○ we need more national parks

39 Which one of the following is not a natural resource?

○ clothes

○ forests

○ soil

○ water

40 To preserve our natural wealth, this article says we should

○ cultivate unused land

○ develop synthetic substitutes

○ invent new types of machinery

○ plan its use

41 Among the following, the resource that replaces itself is

○ copper

○ grass

○ oil

○ tin

42 In the second and third paragraphs, the writer explains the relationship between natural resources and our

○ nation's attitude and growth

○ precautions against their depletion

○ search for new supplies

○ steady increase in population

GO TO THE NEXT PAGE

Tests have been designed since 1920 to measure aptitudes for such fields as mechanics, music, and art. Variations that occur among individuals in mental ability and in physical characteristics, such as height and weight, have long been recognized. More recently, individual differences in special talents have been recognized, measured, and given consideration in many schools.

An aptitude for mechanical tasks is considered to be indicated when one possesses manual dexterity, hand and eye coordination, and orientation in spatial relations. These elements are measured by such tests as tapping, tracing, copying designs, and recognizing physical relationships of objects. Musical aptitude is indicated by the capacity of the individual to discriminate between variations in pitch, tone, consonance, intensity, and rhythm. An aptitude for artistic expression in the graphic arts is thought to consist of specific capacities, such as the recognition of proportion, analysis of perspective, and recognition of color combinations, including tints and shades.

Little doubt exists that the possession of a special aptitude for any one of these fields does not necessarily ensure success. While compensations can be made for the lack of aptitude for a specific endeavor, and skills can be acquired or modified through education and training, satisfactory accomplishment depends also on interest, effort, perseverance, and circumstances peculiar to each situation.

The results of aptitude measurements have practical applications, particularly when considered in the choice of a profession. For example, a dentist, surgeon, or jeweler must possess an unusual degree of eye-hand coordination as well as technical information and professional knowledge. The additional information made available by the use of aptitude tests can serve to help the student become oriented to whatever special talents he may possess and to assist the counselor in offering better guidance.

43 An aptitude test can be useful to students because it

○ indicates strengths and weaknesses

○ is new and easily scored

○ may be widely used

○ teaches them how to read

44 Aptitude test results may be useful to the counselor because they furnish

○ a basis for class grading

○ a sample of a typical class

○ information about student achievement

○ quantitative data on individual students

GO TO THE NEXT PAGE

45 Aptitude tests are used in the schools to

○ aid in making future career plans

○ determine motivational behavior

○ teach technical data

○ test emotional maturity

46 Aptitude tests are used to indicate

○ achievement

○ interest

○ potentiality

○ skill

47 The word "capacity" in the second paragraph means the

○ ability to get straight A's

○ ability to learn and become proficient

○ amount of experience and training one has

○ individual's desire to succeed

48 Special abilities are indicated by the measurement of

○ academic achievement

○ innate intelligence

○ performance related to a specific field

○ variations due to heredity and environment

49 The author's purpose is to

○ demonstrate individual differences

○ explain the use of aptitude tests

○ show differences between aptitudes and intelligence

○ support the reliability of aptitude tests

50 In discussing individual differences, the article points out that

○ they are seldom recognized

○ they do not affect occupational choice

○ they occur in most human characteristics

○ training equalizes differences

STOP

You have probably noticed in the supermarket that when a can of food is marked 9 on top, you cannot tell whether the price is 6¢ or 9¢ without some further clue. This is also true for a can marked 89. The price could read either 89¢ or 68¢, depending upon the way you hold the can. You may have noticed some other numerals which have a meaning when they are written right side up, and also have a meaning when written upside down. Using these numerals, we may form a simple mathematical system.

Begin with a set of objects which will be called members. A member will be represented in general by the letter i. The set of all such members will be represented by a letter E. The notation "$i \in E$" means that the object i is in the set E; that is, the object is one of the members.

Let the members of E be the digits which also designate numbers when the paper on which they are written is turned upside down: 0, 6, 8, 9.

An operation is introduced on the members of E which is called inversion. Inversion is the physical act of turning upside down. The result of inversion of i will be denoted by i^*; for example, $6^* = 9$.

For some of the elements of E, $i^* = i$. This leads to the following definitions.

1. If $i^* = i$, then i is said to be a normal element.
2. If $i^* \neq i$, then i is said to be an abnormal element.

So far, we have discussed only single digit numerals. For a numeral which contains one or more than one digit, each belonging to the set E, we use the word compound.

Examples of compounds are 0, 8, 960, 8896. The set of all compounds is denoted by C. The degree of a compound is the number of digits which make up the compound; for example, the degree of 68 is 2.

GO TO THE NEXT PAGE

51 What is i^* if $i = 0$?

○ 0
○ 6
○ 8
○ 9
○ none of these

52 Consider the set K = {△ ▽ □ ▭}

Let inversion be defined on K as the physical act of turning a member of K upside down. What is $△^*$?

○ △
○ ▽
○ □
○ ▭
○ none of these

53 What is the degree of 069?

○ 0
○ 2
○ 3
○ 4
○ none of these

54 Which of the following numerals is not a compound?

○ 0
○ 06
○ 90
○ 896
○ none of these

55 Which of the following statements is true?

○ All members of the set C are also members of the set E.
○ All members of the set E are also members of the set C.
○ No member of the set C is also a member of the set E.
○ No member of the set C is normal.
○ none of these

STOP

DIRECTIONS FOR PREPARATION AND ADMINISTRATION OF SRI READING COMPRENSION TEST

Winter 1978

PREPARATION FOR TESTING

It is extremely important that all tests are correctly identified with the student's name. You are provided with student ID labels for each class you will be testing. These labels contain the names and ID numbers of all students who were tested in Fall 1977. The first three digits identify the teacher and the last two digits identify the individual student. In some cases, the student enrollment in the class has changed. To accommodate these situations, labels also have been printed for every class which contain only the teacher identification and a blank space for the new students to write their name and birthdate. These blank labels have pre-assigned ID numbers which begin with number 41.

You have been sent a list of the teacher names, schools and ID numbers. Those teachers' names which are marked by an asterisk represent a class where the enrollment has changed and all new students are in the class. In these cases, none of the labels with student names printed on them are to be used, only the blank labels are to be used. All students in these classes must write their name and birthdate on the label. The following procedure should be adhered to when preparing for test administration:

- Check the schedule for each day's testing; identify the teachers' names.

- Check the list of teachers to see if that teacher's class changed from the fall semester.

- In those cases where there has been no change, affix the student labels with names onto the booklets. To assure that any students who were not tested in the fall, but are present for this testing will have a test, affix a few (approximately ten) blank labels to the test booklets. In some classes, a portion of the class enrollment will have changed. Since we do not know which students have left, you will need to use all labels with names and some extra with blanks.

- If the entire class has changed, affix only blank labels to the test booklets.

- Be certain that the correct blank labels are used for each class.

- Labels are to be placed in the middle of the front cover of the test booklet.

TEST ADMINISTRATION

The following should be read to the students. (Directions in caps and marked with a yellow marker are not to be read aloud.)

SAY: I am going to give each of you a booklet. Do not open the booklet or write anything until I tell you to do so. For some of you the booklet has a label with your name on it. For others your name will not be on the label and you will need to write your name and birthdate on the label.

(DISTRIBUTE BOOKLETS TO STUDENTS.)

SAY: If your name is not on the label, write your name and birthdate on the label.

(POINT TO THE LABEL IN THE MIDDLE OF THE PAGE.)

(WALK AROUND ROOM TO CHECK THAT ALL STUDENTS HAVE WRITTEN THEIR NAME AND BIRTHDATE.)

SAY: Now, open your booklet to the first page.* Read the section called "To the Student" silently while I read it aloud. This test will show how well you can read and understand the stories. Read each story. Then do the items following it. Choose the best answer for each item. Then check the circle next to the answer you choose. Mark on one circle.

SAY: Now do the Sample Item.

(PAUSE. ALLOW ENOUGH TIME FOR ALL STUDENTS TO READ THE SAMPLE ITEM AND MARK THEIR ANSWERS.)

SAY: You should have checked the circle next to "Pinto" because the story tells you that Maria was driving a Pinto. Are there any questions? If you do not understand, raise your hand.

(PAUSE. WHEN YOU ARE SURE THAT ALL STUDENTS UNDERSTAND THE DIRECTIONS, SAY:)

---

*If the booklets being used also contain the Vocabulary Test, tell students to turn to Page 6.

SAY: When I tell you to turn the page, begin the test and continue to answer each item, starting with Item 1. Follow the directions at the bottom of each page, until you come to the word "STOP." Are there any questions?

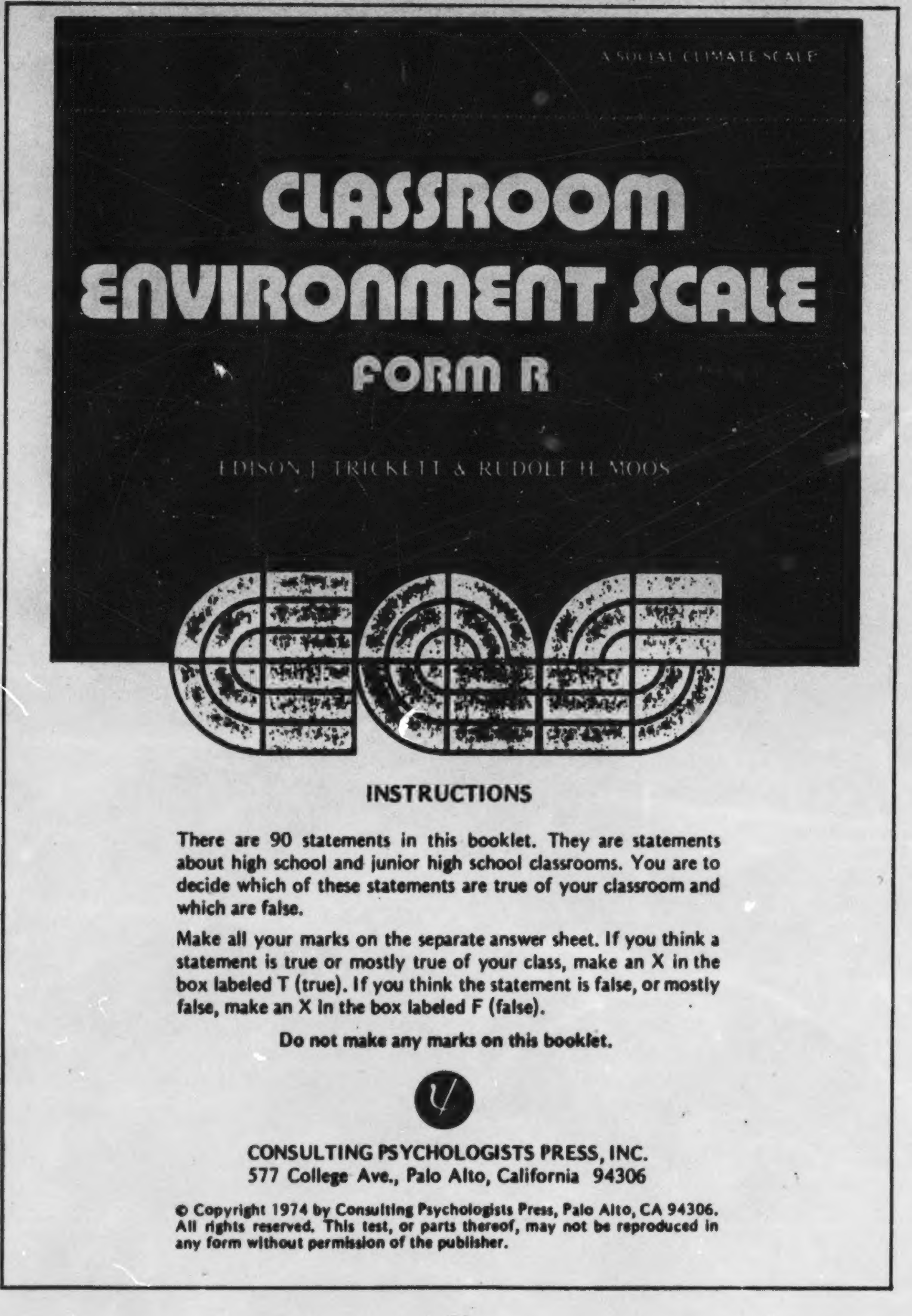
(PAUSE. ANSWER QUESTIONS, IF ANY.)

SAY: Turn the page and begin.

(AFTER 37 MINUTES, SAY:)

SAY: Stop. This is the end of the test. Thank you for working so well on this test.

(GATHER UP THE TEST BOOKLETS.)



A SOCIAL CLIMATE SCALE

CLASSROOM ENVIRONMENT SCALE

FORM R

EDISON J. TRICKETT & RUDOLF H. MOOS

INSTRUCTIONS

There are 90 statements in this booklet. They are statements about high school and junior high school classrooms. You are to decide which of these statements are true of your classroom and which are false.

Make all your marks on the separate answer sheet. If you think a statement is true or mostly true of your class, make an X in the box labeled T (true). If you think the statement is false, or mostly false, make an X in the box labeled F (false).

Do not make any marks on this booklet.

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1. Students put a lot of energy into what they do here.
2. Students in this class get to know each other really well.
3. This teacher spends very little time just talking with students.
4. Almost all class time is spent on the lesson for the day.
5. Students don't feel pressured to compete here.
6. This is a well-organized class.
7. There is a clear set of rules for students to follow.
8. There are very few rules to follow.
9. New ideas are always being tried out here.
10. Students daydream a lot in this class.
11. Students in this class aren't very interested in getting to know other students.
12. The teacher takes a personal interest in students.
13. Students are expected to stick to classwork in this class.
14. Students try hard to get the best grade.
15. Students are almost always quiet in this class.
16. Rules in this class seem to change a lot.
17. If a student breaks a rule in this class, he's sure to get in trouble.
18. What students do in class is very different on different days.
19. Students are often "clock-watching" in this class.
20. A lot of friendships have been made in this class.
21. The teacher is more like a friend than an authority.
22. We often spend more time discussing outside student activities than class-related material.
23. Some students always try to see who can answer questions first.
24. Students fool around a lot in this class.
25. The teacher explains what will happen if a student breaks a rule.
26. The teacher is not very strict.
27. New and different ways of teaching are not tried very often in this class.
28. Most students in this class really pay attention to what the teacher is saying.
29. It's easy to get a group together for a project.
30. The teacher goes out of his way to help students.
31. Getting a certain amount of classwork done is very important in this class.
32. Students don't compete with with each other here.
33. This class is often in an uproar.
34. The teacher explains what the rules are.
35. Students can get in trouble with the teacher for talking when they're not supposed to.
36. The teacher likes students to try unusual projects.

37. I am absent from this class more than my other classes.

38. I try to do my best in this class.

39. On the days that I am in school, I always come to this class.

40. My work in this class is about as good as other students in this class.

41. I try to think of excuses not to come to this class.

42. The teacher thinks that I am a poor student.

43. I only miss this class when I am absent from school for the entire day.

44. I feel comfortable in this class.

STUDENT RATING SCALE OF INSTRUCTORS

DIRECTIONS: Use the pencil provided. Select the rating number that best describes the person or course. Circle the numbered response on this questionnaire. Make no other marks on this form.

A	Objectives and Goals of Course	1 Fails to explain the course objectives	2 Somewhere between 1 & 3	3 Makes class goals clear	4 Somewhere between 3 & 5	5 Is very clear in relating course work to objectives
B	Clearness of assignments	1 Directions and assignments are unclear	2 Somewhere between 1 & 3	3 Directions and assignments are sometimes clear	4 Somewhere between 3 & 5	5 Directions and assignments are always clear
C	Importance of assignments	1 Assignments are meaningless busy-work	2 Somewhere between 1 & 3	3 Assignments are sometimes necessary work	4 Somewhere between 3 & 5	5 Assignments are always necessary work
D	Fairness of grading	1 Grading is unfair	2 Somewhere between 1 & 3	3 Sometimes fair in grading	4 Somewhere between 3 & 5	5 Grading is fair
E	Classroom control in discipline	1 Lacks classroom control; seldom handles discipline well	2 Somewhere between 1 & 3	3 Has fair classroom control; sometimes handles discipline well	4 Somewhere between 3 & 5	5 Has good classroom control; always handles discipline well
F	Preparation for class	1 Never is well prepared for class	2 somewhere between 1 & 3	3 Sometimes prepared for class	4 Somewhere between 3 & 5	5 Always is well prepared for class
G	Manner of speaking with students	1 I find it hard to talk with this teacher	2 Somewhere between 1 & 3	3 I can sometimes talk with this teacher	4 Somewhere between 3 & 5	5 I find it easy to talk with this teacher
H	Ability to Listen	1 Never listens to what I have to say	2 Somewhere between 1 & 3	3 Usually listens to what I have to say	4 Somewhere between 3 & 5	5 Carefully listens and responds to me
I	Student Enjoyment of Class	1 Never enjoys the class	2 Somewhere between 1 & 3	3 Sometimes enjoys the class	4 Somewhere between 3 & 5	5 Always enjoys the class

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J	Benefit of course	1 I have learned nothing from this course	2 Somewhere between 1 & 3	3 I have learned an average amount in this course	4 Somewhere between 3 & 5	5 I have learned a great deal in this course
K	Effort to help students	1 Teacher makes no effort to help me do well in this class	2 Somewhere between 1 & 3	3 Teacher makes some effort to help me do well in this class	4 Somewhere between 3 & 5	5 Teacher always makes an effort to help me do well in this class
L	Interest in students	1 Not interested in me as an individual	2 Somewhere between 1 & 3	3 Somewhat interested in me as an individual	4 Somewhere between 3 & 5	5 Interested in me as an individual
M	Presentation of material	1 Explains the lesson in a confusing manner	2 Somewhere between 1 & 3	3 Explains the lesson clearly	4 Somewhere between 3 & 5	5 Explains even difficult ideas well
N	Participation	1 Never encourages students to question or participate	2 Somewhere between 1 & 3	3 Sometimes encourages students to question or participate	4 Somewhere between 3 & 5	5 Always encourages students to question or participate
O	Stimulation of thought	1 Never encourages students to think	2 Somewhere between 1 & 3	3 Sometimes encourages students to think	4 Somewhere between 3 & 5	5 Always encourages students to think
P	I have been able to get help from this teacher outside of class	1 Yes	2 No	3 Have not tried to get help		
Q	What is your sex?	1 Female	2 Male			
R	What is your ethnic origin	1 Spanish surname	2 White	3 Black	4 Asian	5 Polynesian, Filipino American Indian
S	What is your present grade level?	1 Six	2 Seven	3 Eight		
		4 Freshman	5 Sopomore	6 Junior	7 Senior	
T	What is your birthdate?	month	day	year		

Basic Skills
Spring 1978

ABSENCE RATE FORM

CLASS ATTENDANCE

Teacher Name ______________________________

Teacher I.D. No. ______________________________

School ______________________________

Total Semester Days ______________________________

District ______________________________

Observer Name ______________________________

Class Period ______________________________

- -

Student Name	Student I.D. No.	Entry Date	Leaving Date	Excused Absence	Unexcused Absence	Cut	Total Absence

STUDY OF BASIC SKILLS INSTRUCTION
IN JUNIOR AND SENIOR HIGH SCHOOLS

TEACHER QUESTIONNAIRE

Spring 1978

Your Name ______________________________

Your School and District ______________________________

Today's Date ____________________

CLASSROOM DESCRIPTION

Question

(1) Classrooms differ in many ways depending upon the philosophy and goals of the teaching staff, needs of children, etc. Each statement in Column A is matched with a contrasting statement in Column B. For each pair, place an X inside the parentheses which comes closest to describing your own classroom.

	Column A	Almost always like A	←→	Somewhat like A and somewhat like B	←→	Almost always like B	Column B
a.	Students work independently	(1)	(2)	(3)	(4)	(5)	Students work under adult supervision
b.	Teacher imparts information and provides demonstrations	(1)	(2)	(3)	(4)	(5)	Students gather information on their own
c.	Adults initiate interactions with students	(1)	(2)	(3)	(4)	(5)	Students initiate interactions with adults
d.	Emphasis on emotional needs	(1)	(2)	(3)	(4)	(5)	Emphasis on subject matter
e.	Undesired behavior is corrected	(1)	(2)	(3)	(4)	(5)	Undesired behavior is ignored
f.	Various activities take place at the same time	(1)	(2)	(3)	(4)	(5)	All the class is engaged in the same activity
g.	Lesson plan is followed closely	(1)	(2)	(3)	(4)	(5)	Lesson plan is flexible

	Column A	Almost always like A	↔	Somewhat like A and somewhat like B	↔	Almost always like B	Column B
h.	Work and play are distinguished	(1)	(2)	(3)	(4)	(5)	Work and play are not distinguished
i.	Students choose their own activities and materials	(1)	(2)	(3)	(4)	(5)	Teaching staff determines activities and materials
j.	Individual needs dominant	(1)	(2)	(3)	(4)	(5)	Group needs dominant
k.	Students interact freely with each other	(1)	(2)	(3)	(4)	(5)	Students do not interact freely with each other
l.	Praise and approval given for specific accomplishments	(1)	(2)	(3)	(4)	(5)	Praise and approval given without regard to specific accomplishments
m.	Students change places freely	(1)	(2)	(3)	(4)	(5)	Students have assigned seats

MOTIVATIONAL TECHNIQUES

How often do you use each of the following methods to motivate your students? Please check the appropriate columns.

	Never	Rarely	Occasionally	Often	Regularly
1. Praise	___	___	___	___	___
2. Public recognition	___	___	___	___	___
3. Exemption from tests	___	___	___	___	___
4. Special privileges	___	___	___	___	___
5. Contests, competitive games	___	___	___	___	___
6. Notes to parents	___	___	___	___	___
7. Written comments on papers	___	___	___	___	___
8. Individual prices, rewards	___	___	___	___	___
9. Support or encouragement	___	___	___	___	___
10. Share pleasure in student's achievement	___	___	___	___	___

Appendix B

STUDENTS TESTED, BY DISTRICT AND CLASSROOM

Appendix B

NUMBER OF STUDENTS TESTED, BY CLASSROOM AND DISTRICT

Class By District	Fall 1977 Total Number Students	Fall 1977 Student Rating Scale	Fall 1977 Classroom Environment Scale	Fall 1977 SRI Reading Test	Winter 1978 Total Number Students	Winter 1978 SRI Reading Test	Spring 1978 Total Number Students	Spring 1978 Student Rating Scale	Spring 1978 Classroom Environment Scale	Spring 1978 SRI Reading Test	Comprehensive Test of Basic Skills Spring 1977	Comprehensive Test of Basic Skills Spring 1978
Fresno												
111	8	4	4	4	9	6	7	4	5	6	5	5
112	20	2	--	2	23	17	23	12	12	12	8	8
113	22	7	7	8	20	16	20	15	15	15	12	12
114	19	10	10	10	22	23	26	18	18	18	14	14
[illegible]	32	16	16	16	29	23	27	16	16	16	11	11
[illegible]	28	14	14	12	24	19	23	15	15	15	17	17
123	28	10	10	8	27	14	22	13	13	11	12	12
131	23	16	16	16	30	20	29	--	--	--	18	18
132	29	--	--	--	28	23	23	19	19	19	--	--
Total	209	79	77	76	212	161	209	112	113	112	97	97
Monterey												
211	14	--	--	--	15	7	15	6	6	6	--	--
221	28	13	7	13	28	18	25	18	18	18	--	--
222	29	--	--	--	28	17	21	16	16	17	--	--
223	15	--	--	--	16	--	--	--	--	--	--	--
224	--	--	--	--	--	--	25	--	--	--	--	--
231	17	--	--	--	16	--	13	--	--	--	--	--
232	16	8	8	8	18	11	19	10	10	11	11	11
233	19	--	--	--	16	11	15	11	11	11	4	4
241	16	--	4	6	16	7	8	5	5	6	6	6
243	17	4	4	5	16	10	14	10	10	10	9	9
245	16	--	--	--	14	--	--	--	--	--	--	--
Total	187	25	23	32	183	81	155	76	76	79	30	30

Class By District	Fall 1977				Winter 1978		Spring 1978				Comprehensive Test of Basic Skills	
	Total Number Students	Student Rating Scale	Classroom Environment Scale	SRI Reading Test	Total Number Students	SRI Reading Test	Total Number Students	Student Rating Scale	Classroom Environment Scale	SRI Reading Test	Spring 1977	Spring 1978
Ravenswood												
311	27	8	9	9	28	9	29	9	9	9	12	12
312	29	12	11	12	25	14	26	11	12	14	17	17
313	26	--	--	--	--	--	--	--	--	--	--	--
Total	82	20	20	21	53	23	55	20	21	23	29	29
Salinas												
411	21	--	--	--	17	--	--	--	--	--	--	--
412	22	1	1	1	21	12	21	12	12	12	5	5
413	21	4	4	4	20	14	21	9	8	11	3	3
422	26	17	17	15	30	20	29	14	14	18	6	6
423	29	--	--	--	26	--	--	--	--	--	--	--
424	26	12	12	12	21	14	22	11	11	14	17	17
425	24	9	9	11	23	15	23	14	14	14	17	17
426	23	8	8	8	14	13	17	10	10	11	9	9
427	24	1	1	--	18	23	24	23	23	23	--	--
431	18	4	4	4	17	12	24	8	8	8	--	--
432	21	4	4	4	16	9	20	5	5	5	--	--
Total	255	60	60	59	223	132	201	106	105	116	57	57
San Jose												
511	32	30	30	27	33	32	33	30	30	31	24	24
512	29	21	21	23	30	28	32	25	26	27	20	20
513	17	--	--	--	18	--	--	--	--	--	--	--
521	18	8	8	7	15	12	19	8	8	10	--	--
522	13	5	5	7	16	11	15	8	8	9	--	--
531	22	1	1	1	14	6	19	3	3	5	--	--
532	20	7	6	5	23	17	20	8	8	9	--	--
Total	151	72	71	70	145	106	138	82	83	91	44	44

Class By District	Fall 1977				Winter 1978		Spring 1978				Comprehensive Test of Basic Skills	
	Total Number Students	Student Rating Scale	Classroom Environment Scale	SRI Reading Test	Total Number Students	SRI Reading Test	Total Number Students	Student Rating Scale	Classroom Environment Scale	SRI Reading Test	Spring 1977	Spring 1977
Sequoia												
611	21	5	5	6	12	7	12	5	5	6	--	--
Tulare City												
711	27	--	--	--	24	21	25	20	20	21	16	16
712	13	--	--	--	14	8	9	7	7	7	7	7
713	7	--	--	--	7	3	6	2	2	2	1	1
714	24	--	--	--	20	18	20	18	18	18	14	14
721	27	20	20	19	26	22	26	20	20	21	15	15
Total	98	20	20	19	91	72	86	67	67	69	53	53
Tulare Union												
811	26	16	16	18	29	22	29	20	20	20	19	19
812	18	15	15	15	24	19	23	14	14	15	13	13
813	26	--	--	--	29	--	--	--	--	--	--	--
821	16	8	8	6	19	13	17	9	9	12	12	12
822	26	7	7	8	13	14	20	10	10	13	13	13
823	33	9	9	10	20	19	22	16	15	16	14	14
Total	135	55	55	57	134	87	111	69	68	76	71	71

Appendix C

OBSERVATION VARIABLES

BASIC SKILLS

CLASSROOM SNAPSHOT VARIABLES

Var. No.	Variable Name
S1	Teacher with other adult in social interaction
S2	Teacher without students in classroom management
S3	Total for activity: reading silently
S4	Total for activity: reading aloud
S5	Total for activity: making assignments
S6	Total for activity: instruction
S7	Total for activity: discussion
S8	Total for activity: practice, drill
S9	Total for activity: written assignments
S10	Total for activity: taking test, quiz
S11	Total for activity: non-math or reading instruction
S12	Total for activity: social interaction
S13	Total for activity: student uninvolved
S14	Total for activity: being disciplined
S15	Total for activity: classroom management
S16	Total for material: textbook
S17	Total for material: workbook, worksheet
S18	Total for material: test
S19	Total for material: game/manipulative material
S20	Total for material: reading/math kit
S21	Total for material: machine, chalkboard
S22	Total for material: non-curricular reading
S23	Total for material: no material
S24	Teacher with students reading silently: textbooks
S25	Teacher with students reading silently: workbooks or sheets
S26	Teacher with students reading silently: reading kits
S27	Teacher with students reading silently: machine, chalkboard
S28	Teacher with students reading silently: non-curricular reading
S29	Teacher with students reading aloud: textbook
S30	Teacher with students reading aloud: workbook, worksheet, paper
S31	Teacher with students reading aloud: reading kit
S32	Teacher with students reading aloud: machine, chalkboard
S33	Teacher with students reading aloud: non-curricular leisure reading
S34	Teacher giving assignments to students: textbook
S35	Teacher giving assignments to students: workbook, worksheet, paper
S36	Teacher giving assignments to students: test
S37	Teacher giving assignments to students: game/manipulative materials

Var. No.	Variable Name
S38	Teacher giving assignments to students: reading kit
S39	Teacher giving assignments to students: machine, chalkboard
S40	Teacher giving assignments to students: non-curricular leisure reading
S41	Teacher giving assignments to students: no material
S42	Teacher instructing students using: textbook
S43	Teacher instructing students using: workbook, worksheet, paper
S44	Teacher instructing students using: test
S45	Teacher instructing students using: game/manipulative materials
S46	Teacher instructing students using: reading kit
S47	Teacher instructing students using: machine, chalkboard
S48	Teacher instructing students using: non-curricular leisure reading
S49	Teacher instructing students using: no material
S50	Teacher having discussion with students involving: textbook
S51	Teacher having discussion with students involving: workbook, worksheet, paper
S52	Teacher having discussion with students involving: test
S53	Teacher having discussion with students involving: game/manipulative materials
S54	Teacher having discussion with students involving: reading kit
S55	Teacher having discussion with students involving: machine, chalkboard
S56	Teacher having discussion with students involving: non-curricular leisure readi
S57	Teacher having discussion with students involving: no material
S58	Teacher drilling students using: textbook
S59	Teacher drilling students using: workbook, worksheet, paper
S60	Teacher drilling students using: test
S61	Teacher drilling students using: game/manipulative materials
S62	Teacher drilling students using: reading kit
S63	Teacher drilling students using: machine, chalkboard
S64	Teacher drilling students using: no material
S65	Teacher helping students with written assignments: workbooks
S66	Teacher helping students with written assignments: test
S67	Teacher helping students with written assignments: game/manipulative materials
S68	Teacher helping students with written assignments: reading kit
S69	Teacher helping students with written assignments: machine, chalkboard
S70	Teacher giving test, quiz, to students using: workbook, worksheet
S71	Teacher giving test, quiz, to students using: test
S72	Teacher giving instruction in a subject other than reading: textbook
S73	Teacher giving instruction in a subject other than reading: workbook, worksheet
S74	Teacher giving instruction in a subject other than reading: game/manipulative material
S75	Teacher giving instruction in a subject other than reading: machine, chalkboard
S76	Teacher giving instruction in a subject other than reading: no material
S77	Teacher in social interaction with students
S78	Teacher disciplining students

Var. No.	Variable Name
S79	Teacher with students in classroom management
S80	Student silently reading: textbook
S81	Student silently reading: workbook, worksheet
S82	Student silently reading: reading kit
S83	Student silently reading: machine, chalkboard
S84	Student silently reading: non-curricular leisure reading
S85	Student reading aloud to other students: textbook
S86	Student reading aloud to other students: workbook, worksheet, paper
S87	Student reading aloud to other students: game/manipulative materials
S88	Student reading aloud to other students: reading kit
S89	Student reading aloud to other students: machine, chalkboard
S90	Student reading aloud to other students: non-curricular leisure reading
S91	Student receiving instruction: from game/manipulative materials
S92	Student receiving instruction: from machine, chalkboard
S93	Student having discussion with other students involving: textbook
S94	Student having discussion with other students involving: workbook worksheet
S95	Student having discussion with other students involving: test
S96	Student having discussion with other students involving: game/manipulative materials
S97	Student having discussion with other students involving: reading kit
S98	Student having discussion with other students involving: machine, chalkboard
S99	Student having discussion with other students involving: non-curricular leisure reading
S100	Student having discussion with other students involving: no material
S101	Student drilling with other students using: textbook
S102	Student drilling with other students using: workbook, worksheet, paper
S103	Student drilling with other students using: test
S104	Student drilling with other students using: game/manipulative materials
S105	Student drilling with other students using: reading kit
S106	Student drilling with other students using: machine, chalkboard
S107	Student drilling with other students using: no material
S108	Student doing written assignment: workbook, worksheet, paper
S109	Student doing written assignment: test
S110	Student doing written assignment: game/manipulative materials
S111	Student doing written assignment: reading kit
S112	Student doing written assignment: machine, chalkboard
S113	Student taking test, quiz: workbook, worksheet, paper
S114	Student taking test, quiz: test
S115	Student independent in social interaction
S116	Independent student uninvolved

Var. No.	Variable Name
S117	Independent student being disciplined
S118	Student helping with classroom management
S119	Teacher works with single student
S120	Teacher works with a group
S121	Teacher works with total group

BASIC SKILLS

FIVE-MINUTE INTERACTION VARIABLES

Var. No.	Variable Name
F1	Student to adult, all verbal, task or reading
F2	Adult to student, all verbal, task or reading
F3	Student to adult, all verbal except response (initiated)
F4	Individual student verbal with adult
F5	All adult to individual students, verbal
F6	All adult to groups of students, verbal
F7	All adult to entire class, verbal
F8	Student commands, requests, and direct questions, task or reading
F9	Student commands, requests, and direct questions, reading only
F10	All student commands, requests, and direct questions
F11	All student open-ended questions or requests, task or reading
F12	All student open-ended questions or requests, reading
F13	All student open-ended questions or requests
F14	All student questions or requests to adult
F15	Adult commands, requests, and direct questions to students, non-task
F16	Adult commands, requests, and direct questions to students, task or reading
F17	Adult commands, requests, and direct questions to students, reading
F18	All adult commands, requests, and direct questions to students
F19	Adult open-ended questions or requests to students, task or reading
F20	Adult open-ended questions or requests to students, reading
F21	All adult open-ended questions or requests to students
F22	All adult questions to students
F23	Student responses to an adult, non-task
F24	Student responses to an adult, task or reading
F25	Student responses to an adult, reading
F26	All student responses to adult
F27	Student complying responses to an adult
F28	All student responses to adult command, request, or direct question, non-task
F29	All student responses to adult command, request, or direct question, task or reading
F30	All student responses to adult command, request, or direct question, reading
F31	All student responses to adult command, request, or direct question, task
F32	All student responses to adult command, request, or direct question
F33	Adult response to student requests or questions, non-task
F34	Adult response to student requests or questions, task or reading
F35	Adult response to student requests or questions, reading

Var. No.	Variable Name
F36	Student voluntary responses to all adult questions, task or reading
F37	Adult responses to student requests or questions, task
F38	All adult responses to student requests or questions
F39	Adult responses to student questions or requests with a direct question or request, task or reading
F40	Student extended responses, reading
F41	Student extended responses, task or reading
F42	All adult responses to student questions or requests with a question or request
F43	Student reading aloud
F44	All adult instruction, non-task
F45	All adult instruction, reading
F46	All adult instruction, task
F47	All adult instruction
F48	Adult instructs a group, task or reading
F49	Adult instructs entire class, task or reading
F50	Students receiving instruction from a machine
F51	Student presenting information to a group, reading
F52	Student presenting information to a group, task
F53	All student presenting information to a group
F54	Adult social comments to students
F55	Student social comment to adult
F56	All social comments
F57	Adult task related comments to students
F58	Student task related comments to adult
F59	Adult acknowledgement to students, non-task
F60	Adult acknowledgement to students, task or reading
F61	Adult acknowledgement to students, reading
F62	Adult acknowledgement to students, behavior
F63	All adult acknowledgement to students
F64	All adult encouraging remarks to students
F65	Adult praise to students, non-task
F66	Adult praise to students, task or reading
F67	Adult praise to students, reading
F68	Adult praise to students, behavior
F69	All adult praise to students
F70	Adult praise and support, reading
F71	Adult praise and support, task or reading
F72	All adult praise and support
F73	Adult gives corrective feedback by probing, task or reading
F74	Adult gives corrective feedback by giving correct answer, task or reading
F75	Adult gives corrective feedback by guiding student to answer, task or reading
F76	All adult corrective feedback, task or reading

Var. No.	Variable Name
F77	Adult negative corrective feedback, task or reading
F78	Adult corrective feedback, behavior
F79	Adult negative corrective feedback, behavior
F80	All adult negative corrective feedback
F81	Student not responding to adult, task or reading
F82	All student not responding to adult
F83	All adult not responding to student's question or request
F84	Students not knowing answer to adult's question or request, task or reading
F85	Student refusal to comply with adult, task
F86	Student refusal to comply with adult, reading
F87	Student refusal to comply with adult, behavior
F88	All student refusal to comply with adult request
F89	All adult refusal to comply with student request
F90	All adult non-interacting with students
F91	Adult movement while interacting with students
F92	All adult listening to student
F93	All adult observing student
F94	All classroom interactions, reading
F95	All classroom interactions, task
F96	All classroom interactions, behavior
F97	All adult positive behavior
F98	All student positive behavior
F99	All positive behavior
F100	All adult negative behavior
F101	All student negative behavior
F102	All negative behavior
F103	All adult warm supportive interactions with students
F104	Student being sent from classroom for disciplinary reason
F105	Adult offering students a choice of materials or activities
F106	Student statements which demonstrate ability to synthesize
F107	Adult comments to students regarding classroom assignment
F108	Student comments to adult regarding classroom assignment
F109	All classroom punitive behavior
F110	Student does not know answer; adult gives student corrective feedback by probing
F111	Student does not know answer; adult tells student answer
F112	Student does not know answer; adult guides student
F113	Student does not know answer to adult's question; adult asks another student
F114	Student does not know answer to adult's question; adult encourages student

Var. No.	Variable Name
F115	Student response unacceptable; adult asks another student
F116	Student response unacceptable; adult encourages student
F117	Student response unacceptable; adult rephrases question
F118	Student response unacceptable; adult tells student answer
F119	Student expresses dislike for classroom assignments
F120	All interactions regarding classroom assignments
F121	Adult comments to students regarding organization of classroom
F122	Adult without students involved in organizing classroom
F123	All interactions involved with organization or assignments
F124	Student display of sadness
F125	Student response unacceptable; adult guides student
F126	Adult acknowledgement of student extended response
F127	Adult praise of student extended response
F128	Adult corrective feedback of student extended response
F129	Student refusal to respond; adult encourages student
F130	Student refusal to respond; adult asks another student
F131	Adult acknowledgement of student response to a direct question or request
F132	Adult praise to student response to an open-ended question or request
F133	Student extended responses to adult open-ended question or request, task or reading
F134	All student extended responses to adult open-ended question or request
F135	All adult interactions with outside intruder
F136	Adult begins interaction with a different student
F137	Different student begins interaction with adult

Appendix D

PHASE I DATA

Table D-1

PARTIAL CORRELATIONS OF PROCESS VARIABLES AND STUDENT READING ACHIEVEMENT*

(N = 36 Classrooms)

Variable Number	Description	r	p
Snapshot			
TBM2	Students read aloud with teacher from workbook	.40	.007
TDM7	Teacher instructs using chalkboard	.23	.08
TEM9	Teacher discusses the reading task	.41	.006
TLM2	Teacher grades papers	-.24	.07
IAM2	Students read silently from workbooks	.30	.04
IAM1	Students read aloud from texts to the class	.59	.001
IIM3	Students take tests or quizzes	.25	.09
IKM9	Social interactions	-.52	.001
IOM9	Student uninvolved	-.27	.07
FMI			
5	Adults--Interaction with individuals	-.25	.07
7	Adults--interaction with entire group	.23	.08
9	Student questions, or requests about reading	-.22	.10
44	Adult response to students' questions	-.21	.10
54	Student reading aloud	.24	.07
61	Adult instructs small group in reading	.21	.10
62	Adult instructs entire class in reading	.23	.08
76	Adult acknowledges student behavior	.25	.07
92	Adult gives negative corrective feedback for task or reading	-.21	.10
94	Adult gives negative corrective feedback for behavior	-.23	.08
105	Adults not interacting with students	-.23	.08
113	All classroom interactions related to student behavior	-.23	.08
116	All positive interactions	.24	.08
117	All negative interactions	-.29	.05
121	Students sent from classroom for disciplinary reasons	-.26	.07
126	Adults offer students a choice of activities	-.33	.02
131	Students say 'I don't know the answer'/adult probes student	.52	.001
136	Adult asks with student response to reading question unacceptable/adult asks another student	-.21	.10
160	Adult interaction with intruder	-.25	.07

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*Spring 1976 CTBS reading scores were held constant.

Table D-2

DEMOGRAPHIC CHARACTERISTICS OF THE ACHIEVEMENT GROUPS

	Group	Number of Classes	Number of Students	Number of Non-Homogeneous Classes	Days Absent	Pretest Scores (CTBS)	Post test Scores (CTBS)	Gain
			Average	Average (%)	Average	Average	Average	Average
I	Low Pretest/ High Gain	4	26.50	0	13.77	354.43	433.12	78.69
II	Moderate Pretest/ Moderate Gain	7	23.00	.03	15.86	423.25	492.77	60.52
III	High Pretest/ Moderage Gain	4	25.50	.36	8.80	495.71	557.91	62.20
IV	No Gain	7	22.29	.10	10.19	465.26	470.63	5.37
V	Slight Gain	13	19.69	.14	11.71	462.78	490.66	27.88
VI	Case Study Classroom	1	27.	.00	10.00	432.57	666.76	234.19

Table D-3

MEANS AND STANDARD DEVIATIONS FOR GROUP I--LOW PRETEST/HIGH GAIN AND GROUP IV--NO GAIN

Variable Number	Description	Group I (N=4 Classrooms)	Group IV (N=7 Classrooms)
		Average	Average
	Affiliation	2.37	3.08
Snapshot			
TBM1	Read aloud--textbook	8.54	2.94
TBM2	Read aloud--workbook	—	1.88
TCM2	Make assignments with workbook	—	2.72
TCM9	Make assignments with no material	3.99	1.66
TDM1	Instructing with textbook	3.07	0.87
TDM2	Instructing with workbook	8.14	5.89
TDM7	Instructing with chalkboard	—	2.87
TEM1	Discussion with textbook	—	4.83
TFM2	Drilling with workbook	—	7.73
TGM2	Written assignments with workbook	10.75	4.59
THM2	Evaluation with workbook	5.61	1.34
TIM3	Giving test, quiz with textbook	5.18	1.08
TLM9	Managing classroom with no material	1.17	6.71
TMM9	Transition with no material	3.22	0.99
TPM3	Disciplining with test	—	1.08
IAM1	Silent reading with textbook	1.27	0.19
IAM2	Silent reading with workbook	2.73	—
IAM8	Reading aloud--leisure	—	2.28
IGM2	Written assignments with workbook	4.84	13.21
IGM5	Written assignments with reading kit	—	7.95
ILM3	Classroom management with test	3.31	—
IKM9	Social interaction with no material	—	1.07
FMI			
5	Adults--interaction with individuals	64.50	96.10
6	Adults--interaction with entire group	18.50	11.00
7	Adults--interaction with entire class	47.25	38.29
54	Student reading aloud	40.33	20.19
56	All adult instruction, nontask	0.42	7.52
63	Instructions from a machine	—	16.05
74	Adult acknowledges students for reading	2.42	7.38
88	Adult gives corrective feedback by probing, task, or reading	0.92	3.67
91	Adult gives corrective feedback by task or reading	3.00	12.52
92	Adult gives negative corrective feedback for task or reading	—	0.14
94	Adult gives negative corrective feedback for behavior	—	2.71
96	Student not responding to adult, task or reading	—	1.14
106	Adult movement while interacting with students	20.00	14.57
111	All classroom interactions related to reading	221.00	213.10
112	All classroom interactions, related to task	14.58	5.43
113	All classroom interactions related to student behavior	6.00	21.00
124	All humorous interactions	—	0.33
125	All positive or humorous interactions	9.83	14.10
126	Adult offers students a choice of materials or activities	—	0.10
129	Students comment to adult regarding classroom assignment	3.58	1.29
133	Student does not know answer; adult guides student	—	0.14
139	Student response unacceptable, adult tells student answer	.08	0.62

Table D-4

MEANS AND STANDARD DEVIATIONS
FOR GROUP II—MODERATE PRETEST/MODERATE GAIN AND GROUP IV—NO GAIN

Variable Number	Description	Group II (N=7 Classrooms) Average	Group IV (N=7 Classrooms) Average
	Affiliation	2.44	3.08
	Task orientation	3.25	2.61
	Order and organization	2.34	1.48
	Enjoy class	4.05	3.59
Snapshot			
TBM1	Read aloud—textbook	—	2.94
TBM2	Read aloud—workbook	2.71	1.88
TCM2	Make assignments with workbook	9.98	2.72
TDM6	Instructing with audiovisual equipment	6.37	2.00
TDM9	Instruction with no material	3.17	—
TFM2	Drilling with workbook	1.01	7.73
THM2	Evaluation with workbook	3.19	1.34
TLM9	Managing classroom with no material	1.82	6.71
TPM3	Disciplining with test	—	1.08
IAM1	Silent reading with textbook	—	0.19
IAM2	Silent reading with workbook	4.28	—
IAM8	Reading aloud—leisure	6.38	2.28
IFM2	Drilling with workbook	—	2.26
IGM2	Written assignment with workbook	25.11	13.21
IGM5	Written assignment with reading kit	1.63	7.95
IKM9	Social interaction with no material	0.28	1.07
IOM9	Uninvolved with no material	—	0.45
FMI			
5	Adults—interaction with individuals	83.29	96.10
6	Adults—interaction with entire group	2.71	11.00
7	Adults—interaction with entire class	54.00	38.29
8	Student asks direct questions about task or reading	7.76	18.90
9	Student asks direct questions about reading only	7.57	18.00
11	All students ask direct questions	8.38	20.90
32	Student complies with behavioral correction or reinforcement	1.05	4.81
34	Student responds to adult command, request or direct question; task or reading	25.29	20.33
57	All adult instruction, reading	80.05	57.62
64	Student presents information to group, reading	1.62	—
74	Adult acknowledges students for reading	9.14	7.38
87	All adult praise and support	13.48	10.71
91	Adult gives corrective feedback by task or reading	15.43	12.52
93	Adult gives corrective feedback for behavior	1.81	11.48
94	Adult gives negative corrective feedback for behavior	0.05	2.71
106	Adult movement while interacting with students	15.00	14.57
111	All classroom interactions related to reading	216.67	213.10
112	All classroom interactions, related to task	3.33	5.43
113	All classroom interactions related to student behavior	3.52	21.00
116	All positive interactions	5.19	6.71
119	All negative interactions	0.29	8.57
124	All humorous interactions	0.29	0.33
131	Student does not answer, adult gives corrective feedback, probe	0.86	0.14
138	Student response unacceptable, adult rephrases question	1.10	0.48
139	Student response unacceptable, adult tells student answer	0.81	0.62
144	All interaction involve with organization or assignments	56.67	50.67
156	Adult acknowledges student response to direct questions	5.00	3.43
160	All adult interactions with intruder	1.33	2.90
161	Adult begins interaction with a different student	31.38	24.00
162	Different student starts interaction with adult	10.29	25.62

Table D-5

MEANS AND STANDARD DEVIATIONS FOR GROUP III--HIGH PRETEST/MODERATE GAIN AND GROUP IV--NO GAIN

Variable Number	Description	Group III (N=4 Classrooms) Average	Group IV (N=7 Classrooms) Average
	Task orientation	3.07	2.61
Snapshot			
TBM1	Read aloud--textbook	7.69	2.94
TBM2	Read aloud--workbook	—	2.72
TDM1	Instructing with textbook	7.50	.87
TDM6	Instructing with audiovisual equipment	9.88	2.00
TDM7	Instructing with chalkboard	—	2.87
TFM2	Drilling with workbook	—	7.73
TGM5	Written assignment with game or manipulative materials	4.01	1.27
TIM3	Giving test, quiz with textbook	—	1.08
TLM9	Managing classroom with no material	3.73	6.71
TPM3	Disciplining with test	—	1.08
IAM5	Reading silently with reading kit	5.62	3.17
IAM8	Reading aloud--leisure	.53	21.28
IJM4	Nonreading learning with game or manipulative materials	5.58	—
FMI			
5	Adults--interactions with individuals	38.58	96.10
6	Adults--interactions with entire group	16.92	11.00
7	Adults--interactions with entire class	65.08	38.29
10	Student asks direct questions about task	5.83	0.90
20	Teacher asks questions about task	8.58	0.33
29	Student responds to an adult about reading	18.08	29.24
32	Student complies with behavioral correction or reinforcement	2.42	4.81
56	All adult instruction, nontask	1.33	0.86
57	All adult instruction, reading	37.92	57.62
58	All adult instruction, task	70.42	58.38
61	Adult instructs small group, task or reading	12.17	4.76
62	Adult instructs entire class, task or reading	46.00	22.05
69	All social comments	8.75	5.62
93	Adult gives corrective feedback for behavior	3.42	11.48
109	All adult listening to student	8.83	5.09
110	All adult observing student	15.08	5.86
111	All classroom interactions related to reading	164.08	213.10
112	All classroom interactions related to task	71.75	5.43
113	All classroom interactions related to student behavior	8.00	21.00
119	All negative interactions	0.83	8.57
120	All warm supportive interactions	0.83	3.19
124	All humorous interactions	2.67	0.33
129	Student comments to adult regarding classroom assignment	2.67	1.29
160	All adult interaction with intruder	2.75	2.90
161	Adult begins interaction with a different student	17.92	24.00
162	Different student starts interaction with adult	26.83	25.62

Table D-6

CORRELATION OF ABSENCE RATE AND PROCESS VARIABLES
(N = 35 Classrooms)

Variable Number	Description	r	p
A	Affiliation	-.60	.001
RC	Rule clarity	-.34	.05
S57	Teacher discusses reading	-.34	.05
S79	Teacher manages classroom	-.36	.05
S90	Students use leisure reading books	+.34	.05
S111	Students do written assignments in reading kits	-.41	.01
F10	Students ask teachers questions about the task	-.32	.05
F77	All teacher's acknowledgment given to students' performance	-.32	.05
F85	Teacher praises and acknowledges students for reading	-.38	.05
F86	Teacher acknowledges student for reading and other tasks	-.33	.05
F87	All praise and acknowledgment to students	-.36	.05
F90	Guiding corrective feedback	-.35	.05
F116	All positive interactions	-.32	.05
F120	All warm supportive interactions	-.33	.05

Appendix E

MEANS OF PHASE I AND PHASE II OBSERVATION VARIABLES

Appendix E

MEANS OF PHASE I AND PHASE II OBSERVATION VARIABLES

		Spring Phase I (N=43)		Spring Phase II (N=46)		
		$\bar{X}$	Σ	$\bar{X}$	Σ	Grand Mean
F43	Student reading aloud	19.89	855.27	14.40	662.40	17.05
S4	Total for activity: reading aloud	8.07	347.01	3.62	166.52	5.77
S3	Total for activity: reading silently	12.34	530.62	15.20	699.20	13.82
S9	Total for activity: written assignments	21.13	908.59	20.72	953.12	20.92
S2	Teacher without students in classroom management	35.33	1519.19	20.45	1860.70	25.18
F45	All adult instruction, reading	56.26	2419.18	44.25	2035.50	50.05
F17	Adult commands, requests, and direct questions to students, reading	33.00	1419.00	29.35	1350.10	30.35
F25	Student responses to an adult, reading	30.22	1299.46	27.03	1243.38	28.00
F71	Adult praise and support, task or reading	12.06	518.58	13.40	616.40	12.75
F76	All adult corrective feedback, task or reading	12.72	546.96	12.00	552.00	12.34
F110	Student does not know answer; adult gives student corrective feedback by probing	1.36	58.48	2.45	112.70	2.00
F136	Adult begins interaction with a different student	21.21	912.03	22.73	1045.58	22.00
S10	Total for activity: taking test, quiz	.92	39.56	1.50	69.00	1.50
F56	All social comments	5.52	237.36	6.83	314.18	6.70
F96	All classroom interactions, behavior	10.21	439.03	6.86	315.56	8.48
S2,15	Teacher without students in classroom management	35.30	1517.90	25.00	1150.00	30.00
S12	Total for activity: social interaction	6.76	290.68	4.57	210.22	5.63
S13	Total for activity: student uninvolved	4.57	196.51	6.86	315.56	5.75
S5	Total for activity: making assignments	4.01	172.43	5.00	230.00	4.50
F120	All interactions regarding classroom assignments	56.67	2436.80	66.70	3068.20	66.7

Appendix F

WINTER MEANS OF PHASE II AND PHASE III OBSERVATION VARIABLES

Appendix F

WINTER MEANS OF PHASE II AND PHASE III OBSERVATION VARIABLES

It is of interest to see how stable were the winter means of the observed process variables in Phases II and III. The winter means and spring grand mean are presented for 16 variables on Table F-1.

Winter means for Phase III interactive instruction variables are higher than the winter means of Phase II. This more effective implementation may reflect an improvement in the training program and certainly suggests that the inclusion of teachers as trainers has been an asset to the program.

The Phase III teachers tended to spend less time in management tasks (S2, S15) but overall the means for non-interactive variables, the off-task variables and the organization and grouping variables are very similar for the three data sets.

Table F-1

PHASE II AND PHASE III WINTER MEANS COMPARED WITH GRAND MEAN

		Winter Phase II	Winter Phase III	Spring Grand Mean
		$\overline{X}$ (N=46)	$\overline{X}$ (N=33)	$\overline{X}$ (N=89)
Interactive Instruction				
F17	Teacher questions	+ 62.0	+ 84.0	58.4
F25	Student response: reading			
F71	Praise/support: reading or task	0 13.8	+ 19.4	12.8
F76	Corrective feedback: reading	0 10.8	+ 13.9	12.3
F136	Teacher interacts: different student	0 20.9	0 26.7	22.0
F43	Students reading aloud	0 13.8	+ 27.6	17.1
S4	Reading aloud activity	0 1.9	+ 8.6	5.8
F94	All interactions: reading	+ 208.0	+ 242.0	192.0
Non-Interactive Instrument				
S2	Teacher without students: classroom management	+ 24.0	+ 16.0	25.0
F122	Teacher without students	+ 23.0	+ 33.9	41.0
S3	Silent reading	0 13.0	+ 9.2	13.8
S9	Written assignment	0 24.0	0 27.2	20.9
Off-Task Activities				
F56	Social comments	0 7.6	0 8.6	6.7
F96	Behavior			
S12	Social interaction	+ 8.4	+ 10.0	11.4
S13	Student uninvolved			
Organization and Grouping				
F120	Interactions: assignments and organization	+ 55.0	0 69.7	66.7
S2,S15	Total class management	+ 26.0	+ 18.3	30.0
F48	Teacher instructs group	+ 22.7	+ 17.4	16.7

S = Snapshot variables--percentage of time observed.
F = Five minute interaction variables--frequency out of 300 interactions.
+ = Higher than grand mean.
0 = Lower than grand mean.